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History

A CONTRIBUTION TO THE ORNITHOLOGY OF NORTHEASTERN BRAZIL

BY C. E. HELLMAYR

INTRODUCTION

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The following account purports to give a condensed review of our actual knowledge of the ornithology of the three Brazilian states Maranhão, Piauí, and Ceará. Although "political boundaries do not, as a rule, conform to those which mark the limits of faunal areas,"¹ it has been deemed expedient for practical reasons so to limit the scope of this paper, instead of including the northwestern section of Bahia, which, from the evidence at hand, is faunistically more nearly related to the area circumscribed above than to that part of the state lying south and east of the São Francisco River.

While primarily based on collections made for Field Museum from July 1923 to February 1926, by *Heinrich E. Sneath*, a nephew of Madame E. Sneath of Amazonian fame, in Maranhão, Piauí, and the adjacent districts of western Ceará (and northern Goyaz), and the material gathered by *Robert H. Becker*, from June to September 1913, in eastern Ceará, the present paper includes every species recorded in literature from the three states. Those not represented in Field Museum are enclosed in brackets. Besides our own series, I have had the advantage of examining a large portion of the material secured by *O. Reiser* and his assistants in Piauí during the Vienna Academy's expedition. Several hundred birds from northern Maranhão, collected by the late *Ferdinand Schwanda*, have been compared in European museums. More than twenty years ago the Royal Natural History Museum at Sophia, Bulgaria, had forwarded to me the first lot transmitted by this collector; and various other consignments from the same source, belonging to the museums at Tring, Frankfurt on the Main, Munich, Vienna, and São Paulo (Brazil), passed through my hands during the next decade. Finally, a visit to the Berlin Museum, in June 1926, enabled me to inspect the types of certain forms described by Madame Sneath from Ceará.

¹Chapman, Bull. Amer. Mus. Nat. Hist., 55, p. 3, 1926.

Thanks are due to the authorities of the Vienna Museum, particularly my old friend Mr. Otmar Reiser; Dr. Alfred Laubmann, of the Munich Museum; Dr. Erwin Stresemann, of Berlin; Dr. Frank M. Chapman, of the American Museum of Natural History of New York; Dr. Charles W. Richmond, of Washington, D.C.; and Mr. W. E. Clyde Todd, of the Carnegie Museum, Pittsburgh, for the use of material in the collections under their care. To Mr. H. B. Conover, of Chicago, I am indebted for permission to record in this report numerous specimens preserved in his private collection, and to Mr. Charles Westcott I am under great obligations for invaluable help in revising the manuscript and correcting the proof sheets.

HISTORICAL SKETCH

The first information concerning the bird life of the region is due to the efforts of *Georg Marcgrave* (of Liebstadt, near Meissen, in Saxony), who, together with William Piso, Franz Plante, and others, accompanied Count (later Prince) Johann Moritz of Nassau-Siegen, as naturalist, on his military expedition to Brazil. The Count, in command of a Dutch army, landed on January 24, 1637 at Olinda, drove the Spanish forces over the Rio São Francisco, and immediately organized the government of the reconquered territory which comprised the provinces Sergipe, Pernambuco, Itamarica, Parahyba, Rio Grande do Norte, and Ceará. During his administration, Count Moritz lost no opportunity to explore the natural resources of the country, and he was materially aided by the scientists named above in gathering material in all branches of natural history. When, seven years later, the Dutch expeditionary corps was forced to retreat, Marcgrave shifted the field of his activity to São Paulo de Loanda, on the west coast of Africa, where he soon fell a victim to the deadly climate, at the early age of thirty-four years, leaving, among other scientific material, extensive notes and drawings on the Zoology and Botany of Brazil. This manuscript was preserved by *Johannes de Laet* and, together with W. Piso's "*De Medicina Brasiliae*," was published in 1648 at Leiden and Amsterdam as "*Georgi Marcgravi de Liebstadt, Misnici Germani, Historiae Rerum Naturalium Brasiliae, libri octo*," under the joint title "*Historia Naturalis Brasiliae*," the account of the birds forming "*liber quintus*," divided into fifteen chapters (pp. 190-220). Many of the birds which were described by Marcgrave under vernacular names received Latin denominations from Linnaeus, Gmelin, and others; but owing to the rather vague de-

scriptions and crude illustrations, some of which were, moreover, misplaced in the text, considerable doubt existed as to the proper identification of certain species. Fortunately, the original drawings were discovered in the Royal (now Prussian State) Library at Berlin,¹ and with their help Lichtenstein² undertook a review of the birds included in Marcgrave's work, resulting in the correction of sundry misinterpretations and errors. Lichtenstein's attempt to identify the various species was quite successful, and apart from several cases where our present knowledge leads to different conclusions, his paper even now may be consulted with advantage.

Nothing was added to our scanty knowledge of northeastern Brazil until the Bavarian explorers *J. B. Spix* and *Ph. Martius*, in the course of their famous journey, visited Piauí (entering from the southeast and traversing it in a northwesterly direction to Oeiras and Therezina) and the eastern part of Maranhão, reaching São Luiz by way of Caxias and Itapicurú-mirim, in the early summer of 1819. The few species of birds collected on that trip, hardly more than a dozen, are duly recorded in Spix's "*Avium Species Novae*," published in two folio volumes at Munich in 1824 and 1825.

At about the same time, the Berlin Museum³ apparently received some material from Maranhão, as may be conjectured from the name *Psittacus cumanensis*, imposed by Lichtenstein³ upon a species of Macaw.⁴

In the latter half of the nineteenth century, trade skins from Ceará reached the U. S. National Museum, Washington, D. C., and the Museum of Comparative Zoology, Cambridge, Massachusetts, and a collector by the name of *Zietz* sent a series of birds from the same state to the Bremen Museum.

Much more important, however, were the results of the expedition organized in 1903 by the Vienna Academy of Sciences under the leadership of the ichthyologist *Franz Steindachner*. The party which included *Otmar Reiser* as ornithologist, after working for several months in the state of Bahia, notably along the São Francisco River and its tributaries, the Rio Grande and Rio Preto, in the northwestern section of that state, crossed the Serra do Boqueirão north of Santa Rita into Piauí, reaching Parnaguá on May 11, 1903.

¹See Lichtenstein, Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1814-15, pp. 204-208, 1817.

²Ibidem, for 1816-17, pp. 155-178, 1819.

³Verz. Dubl. Berliner Mus., p. 6, 1823.

⁴See under Species No. 387, p. 439.

After exploring the vicinity of this city, they went on to Santo Antonio de Gilboez, then struck west to Santa Philomena and, stopping at various places, followed the Rio Parnahyba down to its mouth. The ornithological material gathered on this journey through Piahy, numbering upwards of six hundred birds, constitutes the first collection made along scientific lines in that part of Brazil. An account of it was published by Reiser in the "Denkschriften der Akademie der Wissenschaften in Wien, mathematisch-naturwissenschaftliche Klasse," 76, pp. 55-100, 1910; pp. 107-252, 1925, with two maps and one colored plate.

In 1905, *Ferdinand Schwanda* established himself in Maranhão and soon started sending birdskins to Europe. Schwanda at first collected at São Luiz, Bôa Vista, and Primeira Cruz and, later, moved farther east to Miritiba, halfway between the Rio Itapicurú and the frontier of Piahy. Although no account of his collections, scattered through various museums in Europe and America, has ever been published, it appears that his researches were exclusively restricted to the coast region of Maranhão. Schwanda continued collecting until the time of his death which took place about 1910, though I have no information as to the exact date.

In May and June 1910, Madame *Emilie Snethlage*, for many years associated with the Museu Goeldi at Pará, explored the western section of Ceará, working chiefly at Camocim, Ipú, and at São Paulo, in the Serra Grande de Ibiapaba, while *Francisco de Queiroz Lima*, taxidermist of the same institution, in 1915 secured a small collection in the Serra do Castello, in the southern part of the state. A short account of the ornithological results of the two trips, embracing 148 species, was published by Madame Snethlage,¹ while this paper was passing through the press.

Robert H. Becker, in behalf of Field Museum, visited Ceará in the summer of 1913, making collections in the Serra de Baturité, at Quixada, and at a place called Juá, near Igatú. The late C. B. Cory described sundry new forms from this material, but no complete report was ever written. The entire series has been studied in the preparation of this memoir, and the specimens obtained by Becker have been listed under the headings of the different species.

Madame *Snethlage* spent the latter half of 1923 in northern Maranhão (Tury-assú, São Bento, São Luiz), collecting upwards of 500

¹Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, pp. 39-48, Nov., 1926.

birdskins, and has just published¹ an annotated list of 196 species in connection with the report on Ceará quoted above.²

To complete this sketch, it may be mentioned that various specimens from Maranhão, mostly without definite localities, are listed in E. Snethlage's "Catalogo das Aves Amazonicas,"³ while Ihering and Ihering⁴ recorded a number of species obtained by F. Schwanda.

H. SNETHLAGE'S EXPEDITION⁵

Dr. *Heinrich E. Snethlage* began his work late in July 1923 at *São Luiz*, the capital of Maranhão and, up to the end of August, collected in the vicinity of that city and at the estate *Anil*, five kilometers south of *São Luiz*. From August 17 to September 14, his headquarters were at *São Bento*, inland of Alcantara. Thence he moved to *Tury-assú*, farther north on the coast, and to *Alto de Alegria*, about 40 kilometers inland, where collecting was carried on until January 4, 1924. The next station was the island of *Mangunça*, opposite Cururupú (February 22-March 22), after which Dr. Snethlage returned to *São Luiz*, and from April 19 to May 27, 1924, explored the neighborhood of *Rosario*, situated near the left bank of the lower Itapicurú. On June 10, he arrived at *Cocos*, south of Codó, farther up that river, and after working in this district for a month, struck across to the Rio Mearim, reaching it on July 25 at *Pedreiras*, below the junction of the Rio das Flores. From August 8 to October 2, Dr. Snethlage investigated the fauna of *Barra do Corda*, on the upper Mearim. An excursion took him to *Ponto* (Canella), near the sources of the Rio Estevão, a tributary of the Rio Corda, about seventy kilometers south of Barra do Corda. The greater part of October was spent at *Grajahú*, on the river of the same name, in western Maranhão. On the return journey, he stopped at *Victoria (Queimadas)*, a settlement on the Rio Grajahú, about halfway between the city of Grajahú and the junction of the Mearim.

In December 1924, Dr. Snethlage began operations in the eastern section of Piahy at *Ibiapaba*, on the upper Poty, at the foot of the Serra de Ibiapaba (December 12, 1924 to January 17, 1925), and then

¹Loc. cit., pp. 59-69, Nov., 1926.

²Only a few of the more important records, including a number of species not otherwise found in Maranhão, could be incorporated in the present paper.

³Bol. Mus. Goeldi, 8, 1914.

⁴Cat. Faun. Braz., 1, 1907.

⁵See Snethlage's recently published "Meine Reise durch Nordostbrasilien" in Journ. Orn., 75, pp. 453-484, pl. 7, 1927; 76, pp. 503-581, 668-738, 1928.

went fifteen kilometers north to *Arára*, in the Serra (January 20 to February 15). Crossing the state line, he collected for several weeks (February 18 to March 8), at *Varzea Formosa*, Municipio Ipueiras, about 40 kilometers northeast of Arára, at altitudes of from 700 to 1000 meters, in western Ceará, and returning to Piauí, secured a representative series at *Deserto*, a station on the railroad Parnahyba-Piracurucá, about thirty kilometers west of the Serra de Ibiapaba (March 28 to April 15).

In May 1925, Dr. Snethlage started on his long inland journey to southern Maranhão. After spending a few weeks at *São Francisco*, opposite Amarante, on the Rio Parnahyba, and stopping at *Victoria* (July 15), he established headquarters at the *Fazenda Inhuma*, on the left bank of that river, about eighty kilometers below Santa Philomena (July 16 to August 8). From there he went up the Rio Medonho and finally reached *Tranqueira*, near the sources of the Mojú, one of its affluents, approximately one hundred kilometers west of Victoria do Alto Parnahyba (August 13 to September 16). Crossing the Serra Vermelha, Dr. Snethlage passed into the drainage basin of the Tocantins and entered the territory of Goyaz at *Certeza*, near the headwaters of the Rio Perdido, a tributary of the Rio do Somno. On descending the Tocantins, he stopped at *Carolina*, Maranhão (November 9-13), *Philadelphia* (November 25 to December 30), and the missionary station *Santo Antonio, Bôa Vista* (January 25 to February 24, 1926), where, however, owing to a rebellion and poor health, very little collecting could be done.

Altogether, nearly 2000 birdskins were transmitted, all of which, with the exception of certain game birds, have been incorporated in the collection of Field Museum. Considering the adverse conditions under which he was working, Dr. Snethlage deserves full credit for what he has accomplished, and while much detailed work must yet be done, we may safely say that the results of his travels, combined with those of the Vienna Academy's expedition, have supplied us with the necessary material to form a general idea of the bird life of the interior of Maranhão and Piauí.

ZOOGEOGRAPHICAL CONSIDERATIONS

While the available information is not all that could be desired, it is evident that the interior of Maranhão and Piauí, and the state of Ceará probably in its entirety, are closely similar in physiological respects to the table-land of central Brazil. The greater

part of the country is more or less open, broken by comparatively low ridges or mountain ranges (Serras), studded with catinga woods (thorn thickets), and extensive clearings around the human habitations. Strips of virgin forest (gallery forest) are found along the river banks and creeks.¹

The northern coast of Maranhão, on the other hand, presents quite a different aspect, being covered, at least partly, with primeval forest of the same kind as is found in the neighboring Pará district. This applies particularly to Tury-assú, where Dr. Snethlage met with a surprisingly large number of Lower-Amazonian forms. The theory expressed in my review of the Pará ornithology² that this faunal area would be found to extend far beyond the Rio Gurupy has been amply confirmed by Snethlage's and Schwanda's researches. How far this forested belt stretches along the coast of Maranhão, has yet to be determined, though it can be traced, with reasonable accuracy, as far east as Miritiba, where Schwanda secured such a typical forest dweller as *Pyriglena leuconota leuconota*. The occurrence of *Todirostrum sylvia schulzi*, *Xenops minutus genibarbis*, *Momotus momota parensis*, *Brachygalba lugubris lugubris*, and *Ortalis spixi* on the lower Parnahyba (boundary line of Maranhão and Piauí), is not quite conclusive. These species of Amazonian parentage may have followed the gallery forest which extends along the banks of many rivers far into the open country. No doubt this is the way that certain Amazonian species have penetrated the interior of Maranhão. As examples we may cite *Thraupis episcopus episcopus*, taken at Barra do Corda and Cocos, *Xiphorhynchus guttatus eytoni*, at Grajahú, and *Dysithamnus mentalis emiliae*, at Victoria, Queimadas—inland localities at all of which, according to Snethlage, patches of gallery forest exist.

However, it seems pretty certain that not all of the country between the lower Itapicurú and Parnahyba is unbroken forest, since the taking at Miritiba by Schwanda of so typical a representative of the table-land fauna as *Furnarius leucopus assimilis* clearly speaks for the existence in that vicinity of open or at least deforested areas.

The close affinity of northern Maranhão to the Pará region is best illustrated by the following list.

¹Much useful information about the various plant associations and their characteristic birds may be found in the second part of Snethlage's "Meine Reise durch Nordostbrasilien" (Journ. Orn., 76, pp. 505-540, 1928).

²Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, pp. 84, 139, 1912.

GUIANAN-AMAZONIAN SPECIES EXTENDING INTO MARANHÃO,
BUT UNKNOWN FROM EASTERN BRAZIL

- Thryophilus leucotis albipectus*
Troglodytes musculus clarus
Polioptila plumbea plumbea
Basileuterus rivularis mesoleucus
Pachysylvia semicinerea
Cyclarhis gujanensis gujanensis
Chlorophanes spiza spiza
Dacnis cayana cayana
Leistes militaris militaris
Tanagra cayennensis
Thraupis episcopus episcopus (ranging as far inland as Barra do Corda and Codó)
Ramphocelus carbo carbo (ranging apparently all over Piahy; represented by
R. c. centralis south of the Serra de Tabatinga)
Eucometis penicillata penicillata
Caryothraustes canadensis canadensis
Cyanocompsa cyanoides rothschildii
Paroaria gularis gularis
Myiodynastes maculatus maculatus
Terentotriccus erythrurus hellmayri
Onychorhynchus coronatus coronatus
Platyrrinchus saturatus
Tolmomyias sulphurescens assimilis
Rhynchocyclus olivaceus guianensis
Todirostrum chrysocrotaphum illigeri
Todirostrum maculatum maculatum
Todirostrum sylvia schulzi (east to the Rio Parnahyba)
Colaptes auratus auratus
Tyranniscus acer
Tyrannulus elatus elatus
Piprites chloris chlorion
Manacus manacus purus
Schiffornis turdinus wallacii
Platypsaris minor
Pachyramphus polychropterus niger
Pachyramphus marginatus nanus
Lipaugus simplex frederici
Attila thamnophiloides thamnophiloides
Xipholena lamellipennis (probably of east-Brazilian origin)
Synallaxis gujanensis gujanensis
Synallaxis rutilans omissa
Certhiopsis cinnamomea cinnamomea
Philydor ruficaudatus
Philydor erythrocerus lyra
Automolus infuscatus paraensis
Automolus rufipileatus rufipileatus
Xenops minutus genibarbis (east to the Rio Parnahyba)
Sclerurus mexicanus macconnelli
Dendrocolaptes certhia medius
Xiphorhynchus guttatus eytoni
Xiphorhynchus spixii
Lepidocolaptes fuscicapillus layardi
Dendrocincla fuliginosa

Conopophaga roberti (south to the upper Rio Parnahyba)
Corythopsis torquata anthoides
Thamnophilus aethiops incertus
Thamnophilus amazonicus paraensis
Dysithamnus mentalis emiliae (probably of east-Brazilian origin)
Thamnomanes caesius hoffmannsi
Myrmotherula hauxwelli hellmayri
Myrmotherula axillaris axillaris
Myrmotherula menetriesii omissa
Herpsilochmus rufimarginatus frater
Cercomacra sclateri
Cercomacra tyrannina laeta
Pyriglena leuconota leuconota
Hypocnemoides maculicauda
Sclateria naevia naevia
Formicarius ruficeps amazonicus
Formicarius analis analis
Hylophylax poecilinota vidua
Phlegopsis nigromaculata paraensis
Threnetes leucurus medianus
Campylopterus obscurus obscurus
Avocettula recurvirostris
Lophornis gouldii
Thalurania furcata furcatoides
Hylocharis cyanus viridiventris
Agyrtrina leucogaster leucogaster
Heliothrix auritus phainolaema
Anthoscenus longirostris longirostris
Nyctipolus nigrescens
Otus choliba crucigerus
Piculus chrysochloros paraensis
Piculus flavigula magnus
Chrysomitris melanochloros mariae
Veniliornis affinis ruficeps
Celeus jumana jumana
Scapanus trachelopyrus
Momotus momota paraensis (east to the Rio Parnahyba)
Galbula albirostris cyanicollis
Brachygalba lugubris lugubris (east to the Rio Parnahyba)
Notharchus tectus tectus
Rhamphastos monilis
Pteroglossus bitorquatus bitorquatus
Pteroglossus inscriptus inscriptus (east to Pernambuco)
Piaya cayana subsp.
Aratinga guarouba
Pyrrhura perlata lepida
Brotogeris tuiipara
Pionus fuscus
Harpagus bidentatus bidentatus
Leptotila rufaxilla rufaxilla
Ortalis spixi (east to the Rio Parnahyba)

As soon as we advance, in a southerly direction, beyond the forested belt, we meet a very different lot of birds, and we cannot fail to recognize the great similarity to the bird life of Bahia. In fact, a

good many of the characteristic elements known to range from Bahia to Pernambuco, extend, without showing any racial variation, into the dryer inner districts of Piahy and Maranhão, including Ceará. The most striking representatives of this group are *Nyctipolus hirundinaceus*, *Compsothraupis loricata*, and the peculiar humming-bird genus *Anopetia*.

Other species, while widely diffused in the northern provinces, apparently reach the southern limit of their distributional area in the northwestern section of Bahia, whereas east and south of the Rio São Francisco they are either absent or represented by allied forms. Among these may be quoted *Planesticus rufiventris juensis*, *Gnorimopsar chopi sulcirostris*, *Saltator coerulescens superciliaris*, *Paroaria dominicana*, *Cranioleuca vulpina reiseri*, *Pseudoseisura cristata cristata*, *Xiphocolaptes falcirostris*, and *Cyanopsitta spixii*.

Others, like *Tangara cyanocephala cearensis*, *Myiobius atricaudus snethlagei*, *Todirostrum mirandae*, *Xanthomyias virescens reiseri*, *Procnias averano averano*, *Megaxenops parnaguae*, *Sclerurus scansor cearensis*, *Campylorhamphus trochilirostris major*, *Conopophaga cearae*, *Grallaria martinsi*, *Ramphastos theresae*, *Aratinga jandaya*, *Pyrhura leucotis griseipectus*, *Forpus passerinus flavissimus*, etc., have a still more restricted range, having so far been found only in one or all of the three northern states, while in but a few cases a representative form occurs in Bahia.

Within the boundaries of the region treated in this memoir, very little differentiation has taken place, and the species recorded from only part of the territory may yet be discovered in the other sections. However, in a few instances, Ceará appears to have developed peculiar races of its own, such as *Myiarchus tyrannulus pallescens*, *Phyllomyias fasciatus cearae*, and *Piaya cayana cearae*, which are replaced in the more westerly states as well as in Bahia by *Myiarchus tyrannulus bahiae*, *Phyllomyias fasciatus fasciatus*, and *Piaya cayana pallescens* respectively. In the case of a Woodhewer, the Ceará form, *Lepidocolaptes angustirostris bahiae*, encroaches even on the extreme east of Piahy, while a slightly different form is found farther west.

Contrary to conditions existing in the Amazonian region, the rivers in this part of Brazil have no zoogeographical significance, though the lower Parnahyba evidently separates the ranges of *Veniliornis passerinus medianus* and *V. p. taenionotus*.

Two Woodpeckers, *Crocomorphus flavus tectricialis* and *Picumnus exilis alegriae*, are hitherto known only from the north coast of

Maranhão, but it is quite doubtful whether they are of Amazonian or east-Brazilian origin. *Pyrrhura perlata coerulescens*, a Paroquet, is recorded solely from eastern Maranhão (Miritiba). Strangely enough, farther west, around Guimarães, another closely-allied form, *P. p. lepida*, the Pará representative has been found. This peculiar distribution requires further investigation.

The presence in Maranhão of a Bell-bird, *Procnias a. averano*, closely allied to a Guianan species, offers a geographical problem which I am unable to explain.

The subjoined list may help to illustrate the distributional facts discussed in the preceding lines.

LIST OF SPECIES WHOLLY OR CHIEFLY RESTRICTED TO
NORTHEASTERN BRAZIL

<i>Planesticus rufiventris juensis</i>	South to n. w. Bahia (Rio Preto)
<i>Planesticus leucomelas albiventer</i>	Eastern Pará to Bahia
<i>Thryophilus longirostris bahiae</i>	South to Bahia
<i>Polioptila plumbea cearensis</i>	South to Bahia
<i>Vireosylva chivi agilis</i>	South to Bahia
<i>Molothrus badius fringillarius</i>	
<i>Icterus cayanensis tibialis</i>	South to Bahia
<i>Icterus jamacaii</i>	South to Bahia
<i>Gnorimopsar chopi sulcirostris</i>	South to the São Francisco River, Bahia
<i>Tangara cyanocephala cearensis</i>	Known only from Ceará (represented in Bahia by <i>T. c. corallina</i>)
<i>Tangara cayana flava</i>	South to Bahia
<i>Cypsnagra hirundinacea pallidigula</i>	South to Bahia, west to the upper Rio Madeira
<i>Compsothraupis loricata</i>	South to Bahia
<i>Schistochlamys ruficapillus capistratus</i>	South to Bahia
<i>Salpator coerulescens superciliaris</i>	South to the São Francisco River, Bahia
<i>Cyanocompsa cyanea cyanea</i>	South to Bahia
<i>Sporophila albogularis</i>	South to Bahia
<i>Sporophila leucoptera cinereola</i>	South to Rio
<i>Sicalis columbiana leopoldinae</i>	South to the Rio São Francisco, Bahia, west to the Rio Araguaya, Goyaz
<i>Coryphospingus pileatus pileatus</i>	South to Minas Geraes and Espírito Santo
<i>Paroaria dominicana</i>	South to the São Francisco River
<i>Xolmis irupero nivea</i>	Ceará to Bahia
<i>Fluvicola climazura climazura</i>	South to Bahia
<i>Empidonomus aurantio-atro-cristatus pallidiventr</i>	South to Goyaz
<i>Myiarchus tyrannulus pallescens</i>	Recorded only from Ceará
<i>Myiobus atricaudus snethlagei</i>	Maranhão and Piauí
<i>Todirostrum cinereum cearae</i>	South to Bahia
<i>Todirostrum mirandae</i>	Known only from Ceará
<i>Euscarthmornis margaritaceiventer wuchereri</i>	South to Bahia
<i>Stigmatura budytoides bahiae</i>	Piauí and Bahia
<i>Camptostoma obsoletum cinerascens</i>	South to Bahia

<i>Xanthomyias virescens reiseri</i>	Recorded only from Piauhy
<i>Phyllomyias fasciatus fasciatus</i>	Maranhão, Piauhy, Bahia
<i>Phyllomyias fasciatus cearae</i>	Recorded only from Ceará
<i>Procnias averano averano</i>	
<i>Furnarius figulus figulus</i>	South to Bahia
<i>Certhiax cinnamomea cearensis</i>	South to Bahia
<i>Cranioleuca vulpina reiseri</i>	South to the São Francisco River, Bahia
<i>Cranioleuca semicinerea</i>	Ceará to Bahia
<i>Asthenes hellmayri</i>	South to Bahia
<i>Pseudoseisura cristata cristata</i>	South to the São Francisco River, Bahia
<i>Megaxenops paraguayae</i>	Known only from Piauhy and Ceará
<i>Sclerurus scansor cearensis</i>	Recorded only from Ceará
<i>Xiphocolaptes falcirostris</i>	South to n. w. Bahia (Rio Preto)
<i>Lepidocolaptes squamatus wagleri</i>	Recorded only from Piauhy
<i>Lepidocolaptes fuscus tenuirostris</i>	Ceará to Bahia
<i>Lepidocolaptes angustirostris coronatus</i>	Maranhão, Piauhy, and n. w. Bahia
<i>Lepidocolaptes angustirostris bahiae</i>	Extreme eastern Piauhy, Ceará to Bahia
<i>Campylorhamphus trochilirostris major</i>	(Represented in Bahia by <i>C. t. trochilirostris</i>)
<i>Sittasomus griseicapillus reiseri</i>	South to n. w. Bahia and n. Goyaz
<i>Melanopareia torquata torquata</i>	South to Bahia
<i>Conopophaga cearae</i>	Known only from eastern Ceará
<i>Taraba major stagurus</i>	South to Bahia
<i>Sakesphorus cristatus</i>	South to Bahia
<i>Thamnophilus doliatus capistratus</i>	South to Bahia
<i>Thamnophilus caeruleus cearensis</i>	Recorded only from Ceará
<i>Myrmorchilus strigilatus strigilatus</i>	South to Bahia
<i>Herpsilochmus pileatus pileatus</i>	N. Piauhy to Ceará, south to Bahia
<i>Herpsilochmus pectoralis</i>	South to Bahia
<i>Neorhophias melanogaster bahiae</i>	South to Bahia
<i>Grallaria martinsi</i>	Recorded only from Ceará
<i>Anopetia gounellei</i>	South to Bahia
<i>Eupetomena macroura simoni</i>	South to Bahia
<i>Agyrtrina versicolor nitidifrons</i>	Tocantins to Ceará
<i>Nyctipolus h. hirundinaceus</i>	Bahia to s. Piauhy
<i>Nyctipolus h. cearae</i>	N. Bahia to Ceará
<i>Colaptes campestris chrysosternus</i>	South to Bahia
<i>Veniliornis passerinus medianus</i>	W. and s. Piauhy, south to Minas Geraes
<i>Veniliornis passerinus taenionotus</i>	E. Piauhy to Ceará, south to Bahia
<i>Celeus flavescens ochraceus</i>	Lower Amazonia to Pernambuco
<i>Crocomorphus flavus tetricialis</i>	Coast of Maranhão (represented in Bahia by <i>C. f. subflavus</i>)
<i>Picumnus pygmaeus</i>	South to Bahia
<i>Picumnus limae</i>	Known only from s. Ceará
<i>Picumnus exilis alegriae</i>	Coast of Maranhão (represented in Bahia by <i>P. e. exilis</i>)
<i>Nystalus maculatus maculatus</i>	Lower Amazonia to Bahia
<i>Malacoptila striata minor</i>	Recorded only from Maranhão
<i>Ramphastos theresae</i>	Known only from Maranhão and Piauhy
<i>Piaya cayana pallescens</i>	S. Piauhy to Bahia
<i>Piaya cayana cearae</i>	Ceará
<i>Cyanopsitta spixii</i>	South to the São Francisco River, Bahia
<i>Thectocercus acuticaudatus haemorrhous</i>	South to Bahia
<i>Aratinga jandaya</i>	Maranhão to Ceará
<i>Aratinga cactorum caixana</i>	South to n. w. Bahia (Rio Preto)

<i>Pyrrhura leucotis griseipectus</i>	Recorded only from Ceará
<i>Forpus passerinus flavissimus</i>	Maranhão to Ceará (represented in Bahia by <i>F. p. vividus</i>)
<i>Rupornis magnirostris nattereri</i>	South to Bahia
<i>Columbula picui strepitans</i>	South to Bahia
<i>Leptotila verreauxi approximans</i>	South to Bahia
<i>Penelope jaca-caca</i>	South to Bahia
<i>Odontophorus capueira plumbeicollis</i>	Recorded only from Ceará
<i>Nothura boraquira</i>	South to Bahia
<i>Rhynchotus rufescens catingae</i>	Piauhy, west to the upper Rio Madeira
<i>Rhea americana americana</i>	South to Bahia

In studying this list, it will be realized that the bird life of the campo region of the northern states has much in common with Bahia, much more so than with the fauna of Goyaz and Matto Grosso; although a number of species like *Poliophtila dumicola berlepschi*, *Saltator atricollis*, *Euscarthmus rufomarginatus*, *Suiriri affinis affinis*, *Antilophia galeata*, *Herpsilochmus pileatus atricapillus*, *Herpsilochmus longirostris*, *Pygmornis nattereri*, *Thalurania furcata baeri*, and *Picumnus guttifer* are of undoubted southern origin, being widely distributed throughout the central table-land and unknown in Bahia. In comparison to the endemic Bahian elements their number is, however, relatively small, and those that are found only in the extreme south of Maranhão and Piauhy may reasonably be assumed to be immigrants of a comparatively recent period. Further speculation on this subject, however, seems futile until the northern parts of Goyaz have been more thoroughly explored.

ANNOTATED LIST OF THE BIRDS OF MARANHÃO, PIAUHY AND CEARÁ

Under each species in the following pages will be found a reference to the original description with the type locality, also references to the few papers relating to this part of Brazil. Reiser's accounts published in 1910¹ and 1925,² when quoted separately, are cited respectively as "Reiser (1)" and "Reiser (2)." When the references are in both works, the citations read "Reiser, pp." followed by the page number in each paper. Then follows a list of the specimens collected by Dr. Snethlage and, under a separate heading, the material obtained by R. H. Becker and others, whenever examined, is specified.

¹O. Reiser, Liste der Vogelarten, welche auf der von der Kaiserlichen Akademie der Wissenschaften 1903 nach Nordostbrasilien entsendeten Expedition unter Leitung des Hofrates Dr. F. Steindachner gesammelt wurden; Denks. Math.-naturw. Kl. Kais. Ak. Wiss. Wien, 76, pp. 55-100, 1910.

²Ergebnisse der Zoologischen Expedition der Akademie der Wissenschaften nach Nordostbrasilien im Jahre 1903. Vögel von Otmar Reiser; l. c., 76, pp. 107-252, col. plate, two maps, 1925.

Except in the case of certain widespread species, the range of each form has been given as precisely as possible. All measurements are in millimeters.

1. ***Planesticus fumigatus fumigatus* (Lichtenstein).**

Turdus fumigatus Lichtenstein, Verz. Dubl. Berliner Mus., p. 38, 1823—Brazil.

Maranhão: Tury-assú, ♀ ad., ♀ (first annual), Nov. 26, Dec. 10, 1923.

Agreeing with specimens from Bahia and Lower Amazonia (Pará, Mexiana, Obidos, Rio Tapajóz). Individual variation is remarkably great in this species, hardly two examples from any locality being exactly alike. Birds from the Guianas (*P. fredericki* and *P. fumigatus abariensis* of Chubb) appear to me inseparable, and those from southern Venezuela (Orinoco-Caura basin) likewise resemble the general run of the Brazilian Sabiá. In the west, this form ranges to the Rio Madeira (Borba) and Matto Grosso. Specimens from the latter district (Engenho do Gama and São Vicente, Rio Guaporé), by white under tail coverts and reduced amount of cinnamonous quill lining, form the transition to *P. f. hauxwelli*, of Upper Amazonia.

P. f. fumigatus reaches the southern limit of its range on the Rio Parahyba, state of Rio de Janeiro.

2. ***Planesticus rufiventris juensis* Cory.**

Planesticus rufiventris juensis Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 344, 1916—Juá, near Iguatú, Ceará.

Turdus rufiventer (not of Vieillot) Reiser (1), p. 77, 1910—Barro Vermelho and Santa Rita, Rio Preto, Bahia.

Turdus (Planesticus) rufiventer juensis Reiser (2), p. 168, 1925—Rio Preto (Bahia) and Cocal, north of União, Rio Parnahyba (Piauhý).

Maranhão: Codó, Cocos, ♂ (first annual), July 2, 1924.

Piauhý: Ibiapaba, ♂ (first annual), Jan. 13, 1925.

Ceará: Varzea Formosa, ♂ (juv.), March 3, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, three ♂♂ ad., two ♂♂ (first annual), three ♀♀, Aug. 1, 7, 10, 11, 13, 16, 20, Sept. 4; Quixada, ♀ (first annual), June 24, 1913. R. H. Becker.

This light-colored race is distinguished from typical *rufiventris* of southern Brazil, Paraguay, and Argentina by more grayish upper parts, paler chest and decidedly clearer ochraceous tawny abdomen. It appears to be restricted to northeastern Brazil, ranging from

Maranhão, Piauhý and Ceará south to Pernambuco and north-western Bahia (Rio Preto). An adult male from São Marcello, Rio Preto in the collection of Field Museum and a couple of adults from Santa Rita and Barro Vermelho in the Vienna Museum agree perfectly with Cory's original series from Ceará. Birds from southern Bahia (Macaco Secco, near Andarahy), while slightly intermediate, are nearer to *P. r. rufiventris*, as represented by a large series from Minas Geraes, Rio, São Paulo, Matto Grosso, and Argentina.

3. *Planesticus leucomelas*¹ *albiventer* (Spix).

Turdus albiventer Spix, Av. Bras., 1, p. 70, pl. 69, fig. 2, 1825—part, "male," type loc. restr. Pará; Reiser, pp. 77, 169—Lake Parnaguá and below Queimadas, Rio Parnahyba, Piauhý.

Maranhão: São Luiz, ♂ ad., ♀ ad., July 28, Aug. 3, 1923; Codó, Cocos, ♀ ad., June 12, 1924; Grajahú, ♀ ad., Oct. 20, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ (first annual), July 15, 1925.

Additional specimens.—Maranhão: Miritiba, two ♂♂ ad., one ♂imm., two ♀♀, Apr. 28, June 9, Nov. 15, 24, Dec. 31, 1907. F. Schwanda (Munich Museum).—Piauhý: Lake Parnaguá, two ♂♂ ad., one ♀ ad., May 22, 29, June 20, 1903; below Queimadas, Rio Parnahyba, ♀ ad., Aug. 10, 1903. O. Reiser (Vienna Museum).—Ceará: Serra de Baturité, ♂ ad., July 21, 1913. R. H. Becker.

Besides, I have examined the following: Pará, ♂ ♀ ad.; Rio Muriá, east of Pará, ♂ ad.; Santarém, ♀ ad.; Bahia, seven trade skins.

This form is exactly intermediate between *P. l. leucomelas* (Vieill.), of southern Brazil and Paraguay, and *P. l. ephippialis* (Sclater), of Colombia, Venezuela, Guiana, and Brazil north of the Amazon. In grayish pileum and less rufescent upper parts, it closely resembles the northern race (*ephippialis*), but the breast and sides are more strongly shaded with brownish, though less so than in typical *leucomelas*. While single specimens are not always distinguishable, the series as a whole cannot well be united to the brown-headed southern bird, and the recognition of an additional geographic form under

¹As pointed out by Ihering (Cat. Faun. Braz., 1, p. 318, 1907) and Dabbene (Anal. Mus. Nac. Hist. Nat. Buenos Aires, 23, p. 344, 1912), Azara's description of the male of his "Zorzal obscuro y blanco" (No. 80), upon which *Turdus leucomelas* Vieillot (Nouv. Dict. Hist. Nat., nouv. éd., 20, p. 238, 1818) was based, refers, without doubt, to the species with orange ochraceous under wing coverts and white-streaked auriculars; and, although the supposed female belongs to another species (*P. amaurochalinus*), I do not see how we can avoid using Vieillot's term for the southern race of Spix's Thrush.

Spix's name appears to be the most satisfactory course. Wear and fading, however, cause considerable change in color, which must not be overlooked when making comparisons.

4. *Planesticus amaurochalinus* (Cabanis).¹

Turdus amaurochalinus Cabanis, Mus. Hein., 1, p. 5, 1850—Brazil; Reiser, pp. 78, 169—Lake Parnaguá, Piauhý.

Maranhão: São Luiz, ♂ ad., July 28, 1923.

Ceará: Varzea Formosa, adult, March, 1925.

Additional specimens.—Piauhý: Lake Parnaguá, ♂ ad., ♀ ad., May 29, June 18, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, two ♂♂ ad., Sept. 4, 5; Serra de Baturité, ♂ ♀ (first annual), July 16, 22, 1913. R. H. Becker.

The series agrees with examples from southern Brazil, Paraguay, and Argentina.

This species ranges north to Pará and west to the Rio Madeira, Bolivia, and southeastern Peru (Marcapata).

5. *Donacobius atricapillus atricapillus* (Linnaeus).

Turdus atricapilla (sic) Linnaeus, Syst. Nat., 12th ed., 1, p. 295, 1766—based on "Le Merle à teste noire du Cap de Bonne Espérance" Brisson, Orn., 6, App., p. 47, pl. 3, fig. 2, 1760, "Cape of Good Hope" (errore); hab. subst. eastern Brazil.²

Maranhão: Tury-assú, ♂ ad., Oct. 26, 1923; Ponto (Canella), ♂ ad., ♀ ad., Aug. 30, 1924.

Goyaz: Philadelphia, ♂ ad., Nov. 28, 1925.

Agreeing with specimens from Surinam and various parts of Brazil, of which a large series has been compared.

The typical form ranges from northeastern Argentina (Corrientes, Misiones), Paraguay, and southern Brazil north to Guiana and Venezuela, west to the eastern slope of the Andes in Peru and Colombia. In eastern Bolivia it is replaced by *D. atricapillus albo-vittatus* Lafr. and d'Orb., in which the white superciliary streak persists in the adult plumage.

6. *Mimus gilvus antelius* Oberholser.

Turdus lividus (not of Wilson 1810) Lichtenstein, Verz. Dubl. Berliner Mus., p. 39, 1823—Bahia.

¹I suspect that the specimens from Anil and Tury-assú, Maranhão, recorded by Madame Snethlage (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 59, 1926) s. n. *Turdos* (sic) *gymnophthalmus*, will prove to be referable to the above species.

²See Berlepsch and Hartert, Nov. Zool., 9, p. 4, 1902.

Mimus antelius Oberholser, Proc. Biol. Soc. Wash., 32, p. 128, 1919—new name for *Turdus lividus* Lichtenstein, preoccupied.

Maranhão: Mangunça Island, ♂ ad., ♀ ad., Feb. 23, 1924.

In addition, I have examined an adult female secured by the late F. Schwanda at Miritiba, on March 6, 1907 (Museu Paulista, No. 7217). These specimens as well as two adult males from Cajetuba (near Pará) agree with others from Bahia and Rio de Janeiro.

This Mocking bird is closely related to *M. g. gilvus* of Guiana, but differs by reason of its much longer tail with shorter white tips, paler grayish upper parts, and the flanks being heavily streaked with blackish brown. Its range is restricted to the sandy littoral of eastern Brazil from the vicinity of Rio de Janeiro (Lagôa Feia; Marambaia Island) north to Pará (Cajetuba).

7. *Mimus saturninus frater* Hellmayr.

Mimus saturninus frater Hellmayr, Verh. Zool. Bot. Ges. Wien, 53, p. 220, 1903—Ypanemá, São Paulo.

Mimus saturninus arenaceus (not of Chapman) Reiser (1), p. 78, 1910—part, Barro Vermelho, Rio Preto, Bahia and Santo Antonio de Gilboez, Piahy (spec. examined).

Maranhão: São Francisco, Rio Parnahyba, ♂ ad., May 30, 1925; Codó, Cocos, three ♂ ad., ♀ ad., June 11, 16, 17, July 10, 1924; Grajahú, ♀ ad., Oct. 27, 1924; Carolina, two ♂ ad. juv., ♀ juv., Nov. 9, 12, 1925.

Additional specimens examined.—Barro Vermelho, Rio Preto, Bahia, ♂ ad., Apr. 20; Santo Antonio de Gilboez, Piahy, ♂ ad., June 30, 1903. O. Reiser (Vienna Museum).

These specimens are obviously inseparable from *M. s. frater*, though averaging rather smaller than a topotypical series from the state of São Paulo. The present form is very close to *M. s. saturninus*¹ of Lower Amazonia, with which it agrees in dimensions and size of bill, but appears to differ in more brownish upper parts, more buffy suffusion on the rump (in fresh plumage) and less grayish breast, as far as I can make out on comparison with a female from Santarém and a couple of adults from Monte Alegre.

M. s. arenaceus,² while identical in coloration, may be distinguished from *M. s. frater* by its much larger bill. Our own material,

¹*Turdus saturninus* Lichtenstein, Verz. Dubl. Berliner Mus., p. 39, 1823—"Pará"=Rio Tapajóz.

²*Mimus arenaceus* Chapman, Auk, 7, p. 135, 1890—Bahia.

supplemented by the specimens in the collection of the Vienna Museum, enables me to determine the range of these two races in northeastern Brazil. Birds from the vicinity of the city of Bahia (Santo Amaro, São João) and Rio do Peixe, near Queimadas typically represent *M. s. arenaceus*, as defined by Chapman. An adult male from Joazeiro and an adult male from Palmeira, near Sambaiba (an island in the Rio São Francisco, below Barra) are likewise referable to this large-billed form. On the other hand, an adult male from Barro Vermelho, Rio Preto, and another from southern Piauhý (Santo Antonio de Gilboez) have much smaller bills, and agree with our series from Maranhão. The range of *M. s. arenaceus* thus appears to be restricted to the section of the state of Bahia east of the São Francisco River, whereas the western districts as also Piauhý and Maranhão are tenanted by *M. s. frater* which extends all over the central-Brazilian plateau west to Matto Grosso and south to São Paulo and Paraná.

MEASUREMENTS

M. s. arenaceus

Adult males	Wing	Tail	Bill
Bahia (three)	110, 115, 116	128, 131, 133	22, 24, 24
Santo Amaro (one)	114	131	22 ½
Mata de São João (one)	111	—	23
Rio do Peixe (four)	110, 113, 114, 117	130, 132, 132, —	23, 24, 24, 24
Joazeiro (one)	115	127	24

Adult females

Bahia (five)	100, 105, 107, 108, 109	116, 120, 122, 125, 130	21 ½, 22, 22, 23, 23
Santo Amaro (one)	111	132	21
Rio do Peixe (one)	115	135	22
Sambaiba (one)	114	132	24

M. s. frater

Adult males	Wing	Tail	Bill
Maranhão (five)	104, 105, 108, 108, 110	115, 119, 120, 123, 124	18 ½, 18 ½, 19, 19, 19
Piauhý (Gilboez) (one)	110	120	19
Barro Vermelho (Bahia) (one)	113	125	20
Goyaz City (one)	110	123	19
Catalão, Goyaz (one)	117	120	19
Near Bagagem, Minas Geraes (one)	114	131	19
São Paulo (eleven)	110, 110, 111, 114, 115, 115, 116, 116, 117, 117, 119	125, 125, 125, 126, 127, 127, 130, 134, —, —	18 ½, 19, 19, 19, 19, 19, 19, 20, 20
Matto Grosso (four)	106, 108, 109, 115	115, 118, 124, 130	18 ½, 19, 19 ½, 20

M. s. frater

Adult females	Wing	Tail	Bill
Maranhão (two)	108, 108	115, 123	19, 19
Goyaz City (two)	102, 107 ½	114, 120	18, 19
Catalão, Goyaz (one)	110	122	20
Western Minas Geraes (three)	107, 108, 108 ½	120, 123, —	18 ½, 20, —
São Paulo (nine)	103, 105, 107, 107, 108, 109, 109, 109, 110	115, 115, 119, 120, 123, 123, 125, 126, —	18, 18, 18, 18, 18 ½, 19, 19, 19, 20
Matto Grosso (one)	103, 105, 108	121, 122, —	17, 18 ½, 19

8. *Heleodytes turdinus turdinus* (Wied).

Opetiorynchos turdinus Wied, Reise Bras., 2, p. 148, 1821—Rio Catolé, an affluent of the Rio Pardo, southern Bahia.

Maranhão: Barra do Corda, two ♀♀ ad., Aug. 16, Sept. 12, 1924.—Wing 85, 91; tail 82, 85; bill 20, 21.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Jan. 26, 1926.—Wing 93; tail 92; bill 22; ♀ ad., Feb. 19, 1926.—Wing 89; tail 86; bill 23; two ♀♀ juv., Feb. 4, 1926.

The present specimens considerably extend the known range of this scarce species which has previously been recorded only from the Rio Doce (Espírito Santo) and the Belmonte and Catolé rivers (Bahia).

Birds in juvenile plumage have the outer edges of the remiges brighter cinnameous, and lack the dusky spots on the chest, while the broad blackish brown bars on flanks and under tail coverts are barely suggested.

H. turdinus hypostictus (Gould), of Amazonia, differs merely by having more heavily spotted under parts, the spots extending over the greater part of the throat which is plain white in the typical race.

9. *Thryophilus longirostris bahiae* Hellmayr.

Thryophilus longirostris bahiae Hellmayr, Journ. Orn., 51, p. 535, 1903—new name for *Thryophilus longirostris striolatus* (not of Spix) Hellmayr, Verh. Zool. Bot. Ges. Wien, 51, p. 776, 1901—Bahia; Reiser, pp. 78, 170—Parnaguá, Piauhý (spec. examined).

Piauhý: Ibiapaba, ♂ ad., Jan. 14, 1925 (wing 69; tail 58; bill 27); Arára, ♂ ad., Feb. 9, 1925 (wing 67; tail 55; bill 25); ♀ juv., Feb. 13, 1925.

Ceará: Varzea Formosa, ♂ juv., ♀ juv., Feb. 18, 24; ♀ ad., Feb. 18, 1925 (wing 67; tail 57; bill 23).

Additional specimens.—Ceará: Serra de Baturité, two ♂♂ ad., July 16, 18, 1913. R. H. Becker.—Piauhy: Parnaguá, ♀ ad., June 3, 1903. O. Reiser (Vienna Museum).

This form, when compared with a good series of *T. l. longirostris*, from the wooded coast belt of southeastern Brazil (Rio de Janeiro to São Paulo), differs by reason of its much lighter coloration; the back, including wings and tail, are tawny or ochraceous tawny (instead of varying between argus brown and auburn), with the pileum less dusky, while the under parts, particularly the flanks and tail coverts, are warm buff or ochraceous buff instead of ochraceous tawny. Besides, the auriculars are either plain white or barely streaked with dusky.

The specimen secured by Reiser at Parnaguá is in every respect similar to those listed above.

T. longirostris bahiae ranges from Bahia north to Ceará and eastern Piauhy.

10. *Thryophilus leucotis rufiventris* (Sclater).

Thryothorus rufiventris Sclater, P.Z.S. Lond., 1870, p. 328—Goyaz and Matto Grosso.

Thryophilus rufiventris Reiser, pp. 78, 170—Rio Taquarussú and Santa Philomena, Piauhy (spec. examined).

Thryophilus albipectus piauihyensis Hellmayr, Anz. Orn. Ges. Bay., 4, p. 26, 1921—Rio Taquarussú, Piauhy.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♂ ♀ ad., July 18, 21, 1925; São Francisco, ♂ ♀ ad., July 3, 1925; Grajahú, ♀ ad., Oct. 21, 1924.

Goyaz: Santo Antonio (Bôa Vista), ♂ juv. Feb. 3, 1926.

In the light of this new material *T. a. piauihyensis* proves to be inseparable from *rufiventris*, of the central-Brazilian table-land. The specimens obtained by Dr. Snethlage are considerably smaller than the types, and their measurements (wing of males 70-71, females 67-69; tail 53-55) hardly exceed those of *T. l. rufiventris* from Goyaz, Matto Grosso, and Minas Geraes. Furthermore, two adult males from Descalvados, Matto Grosso, in the collection of the American Museum of Natural History, New York, are fully as large (wing 74, 75; tail 55, 56) as the original examples of *piauihyensis* from the vicinity of Santa Philomena. It must be admitted, however, that birds from Piauhy and Maranhão generally have larger, stronger bills.

The coloration of the upper parts, in the Maranhão series, varies between Dresden brown and antique brown, and the intensity of the ventral surface is likewise somewhat variable.

T. l. rufiventris obviously is specifically distinct from *T. longirostris bahiae*, found in eastern Piauí, and differs in much shorter, more curved bill, by no means tawny upper parts, and much more decidedly streaked auriculars. Even young birds, which approach each other in shape and length of bill, may be immediately told by these color-characters. *T. l. rufiventris* ranges from southern Maranhão and Piauí all over the Brazilian table-land south to Matto Grosso (Descalvados) and São Paulo (Barretos, Rio Grande).

11. *Thryophilus leucotis albipectus* (Cabanis).

Thryothorus albipectus Cabanis in Schomburgk, Reisen Brit. Guiana, 3, p. 673, 1848—Cayenne (type in Berlin Museum examined).

Maranhão: Tury-assú, three ♂♂ ad., two ♀♀ ad., Oct. 3, 8, 10, 16, Nov. 30, 1923.

While rather pale underneath, these birds are exactly matched by certain specimens from the Caura Valley (Venezuela) and Lower Amazonia (*T. taenioptera* Ridgw.), which I am unable to separate satisfactorily from *albipectus*, of the Guianas.

They show not the least approach to *T. l. rufiventris*, of central and southern Maranhão and, considered alone, the two forms would certainly be regarded as specifically different.

Tury-assú, a place in the heavily forested district, probably marks the eastern limit of the range of this Amazonian type.¹

12. *Pheugopedius genibarbis genibarbis* (Swainson).

Thryothorus genibarbis Swainson, Anim. Menag., p. 322, Dec., 1837—Brazil = Bahia (see Nov. Zool., 12, p. 271, 1905); Reiser, pp. 100, 171—Primeira Cruz and Miritiba, Maranhão.

Maranhão: Tury-assú, ♂ ad., Nov. 12, 1923; São Luiz, ♂ imm., two ♀♀ ad., July 25, 27, Aug. 8, 1923; Codó, Cocos, ♂ imm., July 8, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 28, 1925; Tranqueira, two ♀♀ ad., Aug. 26, 31, 1925.

The birds from the coast region and Cocos are in every respect identical with a large series from Pará (Benevides) and Bahia, while those from southern Maranhão (Inhuma and Tranqueira), by lighter

¹Recently recorded by Madame Snethlage (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 59, 1926) from Anil, near São Luiz.

Dresden brown pileum and less chestnut back, approach the Goyaz-Matto Grosso form, *P. genibarbis intercedens* (Hellmayr).¹

With sixteen specimens from Bahia, twelve from Benevides (Pará), and two from the Tapajóz (Villa Braga, Itaituba) before me, I am unable to discover the slightest difference by which the Lower-Amazonian birds could be separated. The posterior under parts are exceedingly variable, and ochreous-bellied specimens, along with pale-bellied ones, occur in Bahia and Maranhão as well as on the lower Amazon. Therefore, I have little doubt that *Thryothorus genibarbis harterti* Snethlage,² based on two birds from Serra de Ibipaba, western Ceará, is untenable.

13. *Troglodytes musculus musculus* Naumann.

Troglodytes musculus Naumann, Naturg. Vög. Deutschl., 3, p. 724, table, 1823—Bahia Reiser (2), p. 171, 1925—Parnaguá, Colonia Floriano and Caitetú, Rio Parnahyba, Piauhý.

Troglodytes musculus beckeri Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 344, 1916—Serra de Baturité, Ceará.

Piauhý: Arára, ♂ ad., Feb. 1, 1925.

Additional specimen.—Ceará: Serra de Baturité, ♂ ad., July 14, 1913. R. H. Becker.

In the light of a very satisfactory series from Bahia, Pernambuco, and other parts of eastern Brazil *T. m. beckeri* proves to be indistinguishable from *T. m. musculus*. When describing it, Cory had only a single old faded Bahia trade skin for comparison.

It is thus evident that the dark-bellied typical race ranges north into Ceará and the arid interior of Piauhý.

14. *Troglodytes musculus clarus* Berlepsch and Hartert.

Troglodytes musculus clarus Berlepsch and Hartert, Nov. Zool., 9, p. 8, 1902—Bartica Grove, British Guiana; Reiser (2), p. 171, in text, 1925—Miritiba, Maranhão.

Maranhão: São Luiz, two ♂♂ ad., ♂ juv., Aug. 14, 15, 1923; Codó, Cocos, two ♂♂ ad., June 18, 21, 1924.

Additional specimens.—Maranhão: São Luiz, ♀ ad., June 17, 1905 (Sophia Museum); Miritiba, ♂ ad., ♀ ad., ♂ juv., Apr. 11, Oct. 31, Nov. 9, 1907. F. Schwanda (Munich Museum).

¹Nov. Zool., 15, p. 17, 1908—Rio Thesouras, Goyaz.

²Journ. Orn., 73, p. 264, 1925.

Birds from the forested coast of Maranhão are much paler underneath, buff rather than light pinkish cinnamon, with the throat and abdominal line more whitish. While averaging more buffy than Guianan and Venezuelan specimens, they should doubtless be ranked with the northern form, as numerous examples from Pará match them precisely. The two Cocos skins cannot be distinguished from the coast birds, and it would appear that *T. m. clarus* extends at least as far east as the Rio Itapicurú.

15. *Polioptila dumicola berlepschi* Hellmayr.

Polioptila berlepschi Hellmayr, Nov. Zool., 8, p. 356, 1901—type from Rio das Pedras, northern São Paulo.

Goyaz: Philadelphia, two ♂♂ ad., Dec. 1, 16, 1925.

Agreeing with specimens from Minas Geraes (Agua Suja, near Bagagem) and São Paulo (Rio Paraná).

The present record extends the range of this scarce Gnatcatcher considerably to the north, Leopoldina, on the upper Araguaya, being the most northerly locality where it has previously been taken.

16. *Polioptila plumbea plumbea* (Gmelin).

Todus plumbeus Gmelin, Syst. Nat., 1, (1), p. 444, 1788—based on "Todi species tertia" Pallas, Spic. Zool., 1, fasc. 6, p. 17, 1769, Surinam.¹

Maranhão: Tury-assú, ♂ ad., three ♀♀ ad., Oct. 6, 29, Nov. 26, Dec. 5, 1923.

The Gnatcatchers secured in the heavily forested coast belt of Maranhão belong to *P. p. plumbea*, with light gray upper parts, white-tipped larger wing coverts, excessively broad white edges to the innermost secondaries, and very little black at the base of the lateral rectrices. In all of these particulars they are perfectly similar to a series from French and Dutch Guiana.

17. *Polioptila plumbea cearensis* Cory.

Polioptila livida cearensis Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 343, 1916—Juá, near Iguatú, Ceará.

Polioptila leucogastra Reiser, pp. 77, 168—Serra near Parnaguá, Piahy.

Maranhão: Barra do Corda, ♂ ad., Aug. 11, 1924; Codó, Cocos, two ♂♂ ad., ♀ ad., June 14, 20, 21, 1924; Grajahú, ♀ ad., Oct. 18, 1924.

¹See Penard, Auk, 40, p. 334, 1923.

Piauhy: Ibiapaba, ♂ ad., two ♀ ♀ ad., Dec. 14, 20, 1924, Jan. 12, 1925; Arára, juv., Feb. 9, 1925.

Ceará: Varzea Formosa, ♂ ad., Feb. 19, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, three ♂ ♂ ad., July 31, Aug. 1, Sept. 2, 1913. R. H. Becker.—Piauhy: Serra near Parnaguá, ♂ ♀ ad., May 20, 1903. O. Reiser (Vienna Museum).

These specimens differ from *P. p. plumbea*, of the wooded coast district, by darker gray upper parts, much narrower white edges to the inner secondaries (the white margin being separated from the shaft by a distinct black interspace, about half as wide as the web), much more black at the base of the lateral rectrices, and by having the larger upper wing coverts edged with the color of the back instead of with whitish. They appear to be inseparable from "*leucogastra*," as represented by sixteen examples from various parts of the state of Bahia. The type of *P. l. cearensis* has unusually wide edges to the secondaries, though still narrower than in *plumbea*; but two other males from the type locality as well as the specimens listed above, are not different on this score from "*leucogastra*." The faint creamy tinge on the under parts, alluded to by Cory, does not appear to be of much consequence. It is suggested in the specimen from Varzea Formosa (Ceará), and traces are discernible on a few feathers in two or three other examples. In the type it has completely disappeared through fading.

The east-Brazilian race of the Plumbeous Gnatcatcher, long known as *P. leucogastra*, must stand under Cory's name, since *Sylvia leucogastra* Wied¹ is untenable on account of *Motacilla leucogastra* Ledru²=*Sylvia melanocephala leucogastra*, a Warbler of the Canary Islands.

18. *Basileuterus flaveolus* (Baird).

Myiothlypis flaveolus Baird, Rev. Amer. Birds, p. 252, note, 1865—Paraguay.

Basileuterus flaveolus Reiser, pp. 78, 171—Lagôa Missão and Parnaguá, Piauhy.

Maranhão: Barra do Corda, ♂ ad., three ♀ ♀ ad., Aug. 9, 11, 18, Sept. 9, 1924; Tranqueira, ♂ ad., Aug. 20, 1925; Fazenda Inhuma, Alto Parnahyba, two ♂ ♂ ad., July 18, 23, 1925.

Piauhy: Ibiapaba, two ♂ ♂ ad., ♀ ad., Jan. 5, 13, 1925; Arára, ♀ ad., Jan. 27, 1925.

¹Beitr. Naturg. Bras., 3, (2), p. 710, 1831—Sertão of the state of Bahia.

²Voyage Ténériffe etc., 1, p. 182, 1810—Teneriffe.

The series agrees with specimens from Matto Grosso (Chapada, Urucúm), Bahia (Santo Amaro), and Ceará (Juá, near Iguatú).

The species is widely distributed over the interior of Brazil, from Maranhão and Ceará to Matto Grosso and northern São Paulo, ranging south into Paraguay and west to eastern Bolivia. Besides, it is found along the north coast of Venezuela (La Guaira and Macuto, near Caracas; Las Quiguas, Carabobo; Bucarito, near Tocuyo, Lara), and in spite of this area being entirely cut off from the rest of its range, the few Venezuelan examples seen appear to be inseparable, thus affording a case of discontinuous distribution.

19. *Basileuterus auricapillus auricapillus* (Swainson).

Setophaga auricapilla Swainson, Anim. Menag., p. 293, Dec., 1837—"Mexico" and Brazil.¹

Basileuterus auricapillus Reiser, pp. 78, 172—Santo Antonio de Gilboez, Barra do Cocal, and above Pintados, Rio Parnahyba, Piahy.

Maranhão: Grajahú, one ♂, two ♀ ♀, Oct. 24, 30, 1924; Tranqueira, three ♂ ♂, two ♀ ♀, Aug. 21, 22, 27, 28, 29, 1925; São Francisco, ♂ ad., July 1, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ ♀ ad., July 16, Aug. 8, 1925.

Piahy: Ibiapaba, ♂ ad., Jan. 5, 1925.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Jan. 27, 1926.

These birds average slightly brighter, more yellowish olive above than a series from Rio de Janeiro (Therezopolis) and São Paulo, though there is much individual variation. *B. a. viridescens* Todd,² of Bolivia, seems barely separable, since two skins from the type locality can be matched by specimens picked at random from the series under discussion.

[20. *Basileuterus rivularis mesoleucus* Sclater.

Basileuterus mesoleucus Sclater, P.Z.S. Lond., 1865, p. 286, pl. 9, fig. 1—Demerara, British Guiana; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 59, 1926—Tury-assú, Maranhão.

A specimen secured by Madame Snethlage at Tury-assú extends the range of this Guianan form from the Pará region to northern Maranhão.]

¹Swainson's type, now in the Cambridge (Eng.) Museum, is marked "Brazil, sale 1834." On careful examination, I found it to agree with specimens from Espirito Santo (Engenheiro Reeve) and Rio in the British Museum.

²Proc. Biol. Soc. Wash., 26, p. 170, 1913—Buenavista, Prov. del Sara, Bolivia.

21. *Compsothlypis pitiayumi pitiayumi* (Vieillot).

Sylvia pitiayumi Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 11, p. 276, 1817—based on Azara, No. 109, Paraguay.

Parula pitiayumi Reiser, pp. 78, 171—Riacho Fresco, Piauhý.

Maranhão: Tranqueira, ♂ ad., Aug. 29, 1925.

Additional specimens.—Ceará: Serra de Baturité, two ♂♂ ad., July 20, 21, 1913. R. H. Becker.

These as well as a number of skins from Bahia (Macaco Secco, near Andarahy; Rio do Peixe, near Queimadas; São Marcello, Rio Preto) are identical with a series from southern Brazil (Rio, São Paulo) and Paraguay.

Dr. Chapman¹ has recently presented us with an admirable treatise on the distribution of these Warblers, to which we have merely to add that the range of *C. p. pitiayumi* is far more extensive than shown on the map accompanying his paper, stretching as it does through the northeastern states of Brazil as far north as Ceará, Piauhý, and Maranhão.

22. *Vireosylva chivi agilis* (Lichtenstein).

Lanius agilis Lichtenstein, Verz. Dubl. Berliner Mus., p. 49, 1823—Bahia.

Vireo olivaceus chivi Reiser, pp. 79, 172—Parnaguá, Olho d'Água, and Oro, on the way from Santo Antonio de Gilboez to Santa Philomena, Piauhý.

Maranhão: São Luiz, ♂ ad., one (unsexed) adult, July 25, Aug. 8, 1923; Rosario, Primavera, ♂ ad., ♂ juv., May 8, 1924; Tranqueira, ♂ ad., Aug. 22, 1925; Barra do Corda, ♂ ♀ ad., Aug. 14, Sept. 24, 1924; Codó, Cocos, ♀ ad., June 19, 1924.

Piauhý: Arára, two ♂♂ ad., Jan. 31, 1925.

Additional specimens.—Piauhý: Parnaguá, ♂ ad., May 18; Oro, ♂ ad., July 8; Olho d'Água ♀ ad., June 3, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., Aug. 19, 1913. R. H. Becker.

In the light of this series, supplemented by eleven skins from various parts of the state of Bahia, *V. chivi agilis* would seem to be separable after all from both *V. c. chivi*, of Paraguay, southern Brazil, and Argentina, and *V. c. vividior*, of Venezuela, Trinidad, and Tobago. Compared with the typical race, the birds occurring in eastern Brazil from Bahia northwards are decidedly brighter, more

¹Auk, 42, pp. 193-208, 1925.

yellowish above, with the pileum clearer gray, while the flanks are more extensively tinged with a brighter yellow. I admit that certain specimens run very close to *chivi*, but the majority are distinguishable without difficulty. In fact, *V. c. agilis* forms the transition to the Caribbean form (*V. c. vividior*), being, however, not so richly colored above, while the dimensions, particularly of wing and tail, are markedly less. Specimens from the north bank of the Amazon (Itacoatiará and Manáos) are identical in coloration but somewhat smaller and, if referable to *V. c. griseola* Todd,¹ this form would seem to be exceedingly close to *V. c. agilis*.

MEASUREMENTS OF ADULT MALES

<i>V. chivi chivi</i>	Wing	Tail	Bill
Buenos Aires (two)	69.70	53.55	13, 13½
Misiones (five)	70-72	54-58	12-13
State of Paraná (eight)	72-75	54-58	13-14
São Paulo (six)	71-74	53-56	13-13½
Rio de Janeiro (one)	70	52	13
<i>V. chivi agilis</i>			
Bahia (two)	69.71	53.55	13, 13
Piauí (four)	67-71	51-54	12-13
Ceará (one)	72	56	13½
Maranhão (four)	70-72	51-55	12-13
<i>V. chivi griseola</i> (?)			
Manáos and Itacoatiará (four)	66-68	49-50	12-13
<i>V. chivi vividior</i>			
Santa Marta region (four)	71	50	15½
Mérida, Venezuela (three)	72-75	53-55	15-16
Lake Valencia (one)	74	54	15
Cumaná (six)	73-79	53-58	15-16
Caicara, Río Orinoco (two)	72, 75	52, 54	15, 15½
Caura River (two)	72, 75	52, 53	14½
Trinidad (ten)	72-78	50-59	14½-16
Tobago (thirteen)	73-79	53-60	15-16
Roraima (<i>V. roraimae</i> Chubb) (three)	72-76	52-57	14½-15

23. *Pachysylvia semicinerea* (Sclater and Salvin).

Hylophilus semicinereus Sclater and Salvin, P.Z.S. Lond., 1867, p. 570, pl. 30, fig. 2—Pará.

Maranhão: Tury-assú, ♀ ad., Nov. 17, 1923.—Wing 57; tail 46; bill 12.

This specimen, which agrees with topotypes, extends the range of the species from Lower Amazonia to Maranhão.

¹Proc. Biol. Soc. Wash., 37, p. 124, 1924—Pied Saut, French Guiana.

It is safer to treat this bird as a distinct species, since Miller and Igleseder¹ obtained a single example at the foot of Mount Duida, that is to say, in the same general region where *P. thoracica griseiventris* (Berl. and Hart.)² is known to occur. The Duida specimen is somewhat darker above than others from Amazonia, but the divergency requires confirmation by further material.

24. *Pachysylvia pectoralis* (Sclater).

Hylophilus pectoralis Sclater, P.Z.S. Lond., 1866, p. 321—"in Brazil merid. prov. Matto Grosso" ["et Rio de Janeiro"—errore]; the type examined in the British Museum is an adult male obtained by Natterer at [Villa Bella del Matto Grosso (see Sclater, Ibis, 1881, p. 298)].

Maranhão: Tury-assú, ♂ ad., three ♀ ♀ ad., Oct. 13, 29, Nov. 28, Dec. 17, 1923; Rosario, ♀ ad., one (unsexed) adult, May 15, 16, 1924; Codó, Cocos, ♂ ad., July 20, 1924.

These specimens, with one exception, agree with a series from Guiana and northern Brazil (Mexiana, Rio Branco) in the rather pale yellowish breast and grayish white abdomen. An adult male from Tury-assú has the breast of a much deeper wax yellow and the middle of the belly decidedly washed with buffy. It closely resembles two adults from Villa Maria, Matto Grosso (topotypes of *P. pectoralis*) and an adult male from Leopoldina, Rio Araguaya, Goyaz (topotype of *P. araguayae* Reichenow).³ However, the type of the latter, kindly forwarded by E. Stresemann, does not appreciably differ from Guianan skins and tends to indicate that the variation is individual rather than racial. Moreover, if two forms are distinguishable, *P. araguayae* Reich. (from Goyaz) is, in any case, synonymous with *P. pectoralis* (from Matto Grosso), while the Guianan-Amazonian birds are entitled to the name of *P. griseiceps* Penard,⁴ of which *P. thoracicus abariensis* Chubb⁵ is a synonym.

25. *Pachysylvia poicilotis amaurocephala* (Nordmann).

Sylvia amaurocephala Nordmann in Erman's Reise, Naturhist. Atlas, p. 14, 1835—"Brazil" (the type examined in the Berlin Museum was received from the Prince of Wied; type locality, therefore, boundary line of Minas Geraes and Bahia).⁶

¹See Cherrie, Mus. Brookl. Inst., Sci. Bull., 2, p. 157, 1916.

²Nov. Zool., 9, p. 11, 1902—Suapure, Caura River, Venezuela.

³Journ. Orn., 68, p. 88, 1920.

⁴Vog. Guyana, 2, p. 538, 1910—Surinam.

⁵Birds Brit. Guiana, 2, p. 395, 1921—Abary River, British Guiana.

⁶See *Sylvia poicilotis* (not of Temminck) Wied, Beitr. Naturg. Bras., 3, (2), p. 715, 1831.

Pachysylvia amaurocephala cearensis Snethlage, Journ. Orn., 73, p. 266, 1925—São Paulo, Serra de Ibiapaba, Ceará.

Piauí: Arára, ♀ ad., and one (unsexed) adult, Jan. 28, 29, 1925.
Ceará: Varzea Formosa, two ♂♂ ad., Feb. 25, 26, 1925.

On comparing a series of fresh skins from Bahia (Santo Amaro, Bahia City, etc.), I am unable to see the slightest difference by which the Ceará form recently proposed by Madame Snethlage can be discriminated, and I am afraid the learned lady was misled by old faded trade skins which are indeed duller above and less shaded with buffy underneath.

P. p. amaurocephala is generally listed as being confined to the northern parts of eastern Brazil, but in addition to a considerable series from Bahia and farther north, I have examined a number of specimens from southern Brazil, viz., ♂ ♀ ad. from Agua Suja, near Bagagem in Minas Geraes, an adult male obtained by Natterer on the Rio Paraná, São Paulo, on May 9, 1823, and another male at Tring from Victoria de Botucatú, São Paulo, taken by A. Hempel on July 28, 1902. While typical in coloration, they are slightly larger with a stronger bill. Nordmann's type in the Berlin Museum, although partly discolored by preservation in alcohol, shows the same large proportions and, no doubt, came from Minas Geraes and *not* from "Rio de Janeiro" as stated on the label.

P. p. poicilotis (Temm.)¹ replaces it in southeastern Brazil, from Rio de Janeiro to Santa Catharina, ranging into Paraguay and Misiones. While typically colored specimens are easy enough to distinguish by their blackish (instead of grayish) auricular patch, yellowish under parts, and other characters, complete intergradation takes place in São Paulo, as Natterer's series in the Vienna Museum clearly demonstrates.

26. *Cyclarhis gujanensis gujanensis* (Gmelin).

Tanagra gujanensis Gmelin, Syst. Nat., 1, (2), p. 893, 1789—based on Buffon's "Verderoux," French Guiana.

Maranhão: Tury-assú, ♂ ad., Dec. 7, 1923.

This bird is apparently referable to the typical race, though differing from Pará and Guianan skins by more powerful bill and greater extent of the dull greenish area on foreneck and sides of chest. In size of bill it closely approaches *C. g. cearensis*, and the pectoral zone

¹*Hylophilus poicilotis* Temminck, Nouv. Rec. Pl. Col., livr. 29, pl. 173, fig. 2, 1822—"Brésil, coll. Natterer," = Ipanemá, São Paulo.

occupies about as much space, being, however, much duller in tone (oil yellow as in *gujanensis*, instead of pinard or strontian yellow). Like Guianan examples, it has the pileum pure gray, without any brownish tinge, and the flanks strongly shaded with grayish.

The forest belt of western Maranhão forms the eastern limit of the range of *gujanensis*. Farther south and east it is represented by the next race.

27. *Cyclarhis gujanensis cearensis* Baird.

Cyclorhis cearensis Baird, Rev. Amer. Birds, p. 391, 1866—Ceará.

Maranhão: São Bento, ♀ ad., Sept. 12, 1923; São Luiz, ♂ ad., Aug. 20, 1923; Barra do Corda, two ♂♂ ad., Sept. 17, 23, 1924; Codó, Cocos, ♂ juv., June 21, 1924; Tranqueira, ♀ ad., Aug. 31, 1925; Fazenda Inhumá, Alto Parnahyba, ♀ ad., adult (unsexed), July 16, 18, 1925.

Piauí: Arára, ♂ ♀ ad., Jan. 24, 31, 1925.

Ceará: Varzea Formosa, ♂ ♀ ad., Feb. 27, Mar. 2, 1925.

Goyaz: Philadelphia, ♂ ad., two ♀♀ ad., ♀ (first annual), Nov. 25, 26, 27, Dec. 1, 1925.

Additional specimens.—Maranhão: Miritiba, ♀ ad., Nov. 17, 1907. F. Schwanda (Munich Museum).—Ceará: Quixadá, two ♂♂, one ♀, June 25, 29, 30; Serra de Baturité, four ♂♂, July 16-19; Juá, near Iguatú, three ♂♂, two ♀♀, Aug. 2, Sept. 2, 4, 5, 1913. R. H. Becker.

The series from Ceará is topotypical of *cearensis*. The specimen from Cocos in fluffy juvenile plumage, and a female from Philadelphia with pointed, apically pale-edged rectrices (a sign of immaturity) lack the plumbeous spot at the base of the lower mandible. This "phase," formerly recognized by Berlepsch and myself under the name of *C. wiedii*, turned out to represent an immature stage of *C. g. cearensis*. This is clearly demonstrated by a series from western Minas Geraes (Água Suja, near Bagagem) in the Munich collection and another from Bahia in the American Museum of Natural History, New York.

The single female from São Bento, having less grayish pileum and duller yellow pectoral area, shows a tendency towards the characters of *C. g. gujanensis* to which I have actually referred a bird from Tury-assú, in extreme northwestern Maranhão.

C. g. cearensis ranges from Maranhão (except the extreme northwest), Piauí, and Ceará south to Bahia, western Minas Geraes,

Matto Grosso, and northern São Paulo (Rio Paraná, Barretos), west to the plains of eastern Bolivia (Chiquitos).

[28. *Progne chalybea domestica* (Vieillot).

Hirundo domestica Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 520, 1817—based on Azara, No 300, Paraguay and La Plata River.

Progne domestica Reiser, pp. 77, 167—Parnaguá, Piahy.

Reiser refers two Gray-breasted Martins taken at Parnaguá on May 18, 1903, to the large southern race whose range I can trace, according to the available material, as far north as Bahia and southern Goyaz (Rio Araguaya, near Leopoldina). While two adults from Espirito Santo (Marajó) are wholly typical of *chalybea*, a single female from Pará is just intermediate in dimensions between *chalybea* and *domestica*.]

29. *Phaeoprogne tapera tapera* (Linnaeus).

Hirundo tapera Linnaeus, Syst. Nat., 12th ed., 1, p. 345, 1766—based on Brisson (Cayenne) and Marcgrave (eastern Brazil) type locality (as designated by Berlepsch and Hartert, Nov. Zool., 9, p. 14, 1902) eastern Brazil (ex Marcgrave).

Maranhão: São Bento, ♀ ad., Aug. 28, 1923.—Wing 127; tail 64; bill 11.

While agreeing with Dr. F. M. Chapman's view that the Brown-backed Martin is divisible into two races, I must dissent from his nomenclature and consider *P. tapera immaculata*¹ as a synonym of *P. t. tapera*. Linnaeus based his diagnosis on Brisson, who described a bird from Cayenne in Réaumur's collection, and Marcgrave's account of a swallow met with during his travels in northeastern Brazil (Sergipe to Ceará).² Specimens from French Guiana and a series from Pernambuco and Bahia (with one exception) show no trace of dusky spots along the pectoral line, and the jugular band is narrow and ill defined, while the sides of the neck are brown like the upper parts. In other words, they correspond to the characters of *P. t. immaculata* and appear to me inseparable from a series of Bogotá skins and one specimen from the lower Magdalena. Furthermore, Wied, in describing his *Hirundo pascuum*³ from the interior of Bahia, makes no mention of the dusky spots underneath; so it seems pretty certain that the form with unspotted under parts ranges at least as

¹Bull. Amer. Mus. Nat. Hist., 31, p. 156, 1912—Chicoral, Río Magdalena, Colombia.

²Sloane's reference, likewise quoted by Linnaeus, does not belong here.

³Beitr. Naturg. Bras., 3, (1), p. 360, 1831—interior of Bahia.

far south as Bahia, in eastern Brazil. Birds from southern Brazil (Rio Grande do Sul and Matto Grosso), Paraguay, and Argentina (Buenos Aires) are larger, the darker brown jugular band is more abruptly defined and continued along the middle of the breast by a row of coarse dark brown spots, the white of the throat encroaches on the sides of the neck, and the dorsal surface averages slightly darker. Their proper name is *P. tapera fusca* (Vieillot).¹ The characters of the two forms are fairly constant, though, as pointed out by Chapman (l.c.), specimens with dusky spotted middle line occasionally occur as individual variants in the range of typical *tapera*. Among the large series examined, two males from Marabitanas (Rio Negro), one from Georgetown (British Guiana), and the bird from São Bento listed above are representatives of this mutation.

30. *Stelgidopteryx ruficollis ruficollis* (Vieillot).

Hirundo ruficollis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 523, 1817—Brazil (the type examined in the Paris Museum is from Rio de Janeiro, coll. Delalande).

Stelgidopteryx ruficollis Reiser, pp. 77, 168—Santo Antonio de Gilboez, Piauhý. Maranhão: Tranqueira, ♀ ad., Aug. 29, 1925.

Similar to specimens from southern Brazil. In the north, its range extends as far as Pará.

[31. *Pygochelidon cyanoleuca* (Vieillot).

Hirundo cyanoleuca Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 509, 1817—based on Azara, No. 303, Paraguay.

Atticora cyanoleuca Reiser, pp. 77, 168—Parnaguá, Xingú near Santa Maria (road from Santo Antonio de Gilboez to Santa Philomena), Queimadas, Rio Parnahyba, Piauhý.

Specimens of this widely distributed Swallow were obtained by the Vienna Academy Expedition at various localities in Piauhý. Dr. Snethlage did not meet with the species.]

32. *Iridoprocne albiventer albiventer* (Boddaert).

Hirundo albiventer Boddaert, Tabl. Pl. Enl., p. 32, 1783—based on Daubenton, Pl. Enl. 546, fig. 2, Cayenne.

Tachycineta albiventeris Reiser, pp. 76, 167—Parnaguá and coast district of Piauhý.

Maranhão: Tury-assú, ♂ ad., Nov. 30, 1923.

Generally distributed in eastern South America.

¹ *Hirundo fusca* Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 510, 1817—based on Azara, No. 301, Paraguay.

33. *Anthus lutescens lutescens* Pucheran.

Anthus lutescens Pucheran, Arch. Mus. Hist. Nat. Paris, 7, p. 343, 1855—Brazil (the type examined in the Paris Museum was obtained by Delalande at Rio de Janeiro); Reiser (2), p. 172, 1925—Rio Parnahyba and Amaração, Piahy (spec. examined).

Anthus rufus (not *Alauda rufa* Gmelin) Reiser (1), p. 79, 1910—Rio Parnahyba, near Queimadas and littoral of Piahy.

Maranhão: São Bento, ♂ ♀ ad. (in worn breeding plumage), Aug. 30, Sept. 6, 1923; Mangunça Island, ♀ ad., Feb. 25, 1924.

Additional specimens.—Piahy: near Queimadas, Rio Parnahyba, ♂ ad., Sept. 2; Amaração, four ♂♂ ad., ♂ juv., four ♀♀ ad., Sept. 14, 1903. O. Reiser (Vienna Museum).

Characters and range of this widespread species have been discussed elsewhere.¹

[34. *Chlorophanes spiza spiza* (Linnaeus).

Motacilla spiza Linnaeus, Syst. Nat., 10th ed., 1, p. 188, 1758—based on Edwards (excl. var. β), Surinam.

Chlorophanes spiza Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 60, 1926—Tury-assú, Maranhão.

Recorded by Madame Snethlage from northern Maranhão. Widely distributed in northeastern South America.]

35. *Dacnis cayana cayana* (Linnaeus).

Motacilla cayana Linnaeus, Syst. Nat., 12th ed., 1, p. 336, 1766—based principally on "Le Pipit bleu, de Cayenne," Brisson, Orn., 3, p. 534, pl. 28, fig. 1, 1760, Cayenne.²

Maranhão: Tury-assú, ♀ ad., Oct. 10; São Luiz, two ♀♀ ad., July 28, Aug. 1, 1923.—Wing 61, 61, 62; tail 41, 41, 43.

In size and bluish throat, these specimens agree with females from French Guiana, Venezuela, and Lower Amazonia, and it appears that, as in so many other cases, the range of the Guianan form of the present species extends along the northern coast of Maranhão.

36. *Dacnis cayana paraguayensis* Chubb.

Dacnis cayana paraguayensis Chubb, Ibis, (9), 4, p. 619, 1910—Sapucay, Paraguay.

Dacnis cayana (not *Motacilla cayana* Linnaeus) Reiser, pp. 86, 187—Oro, west of Santo Antonio de Gilboez (Piahy) and opposite Barra do Galiota (Maranhão).

¹See El Hornero, 2, p. 183, 1921.

²Although description and figure fail to indicate the black gular patch, Brisson's account can hardly refer to any other species.

Maranhão: Tranqueira, ♂ ad., Aug. 31, 1925; Bôa Fé, ♂ ad., Sept. 19, 1925; Barra do Corda, Ponto, ♂ juv. (in female garb), Sept. 1, 1924.

Additional specimens.—Ceará: Serra de Baturité, three ♂ ad., ♀ ad., July 17, 19, 1913. R. H. Becker.

Birds from the interior of Maranhão and Ceará are much larger, and the females lack the bluish tinge on the throat, the latter being pale dingy yellowish gray. They agree well with a series from Paraguay and southern Brazil (Goyaz, Matto Grosso, Minas Geraes, São Paulo, Rio Grande do Sul) and should apparently be referred to *D. c. paraguayensis*. Birds from the east coast of Brazil (Pernambuco to Rio) are puzzling, their dimensions being just intermediate between typical *cayana* and *paraguayensis*; but as only a few specimens (and no females) have been available for examination, their proper allocation depends on further material. If separable, they would be entitled to the name *D. cyanater* Lesson.¹

MEASUREMENTS OF ADULT MALES

<i>D. cayana cayana</i>	Wing	Tail
French Guiana (eleven)	59-63	39-43
Mazaruni River, Brit. Guiana (one)	61	40
Paramaribo, Dutch Guiana (one)	64	44
Caura River, Venezuela (ten)	62-67	—
Near Cumaná, Venezuela (two)	62, 64	—
Cumbre de Valencia, Venezuela (three)	63-64	41-45
Trinidad (seven)	62-64	41-44
Bôa Vista, Rio Branco (one)	64	44
Manãos, Brazil (one)	62	43
Obidos, Brazil (one)	63	42
Pará region, Brazil (five)	60-64	40-43
<i>D. cayana</i> —?		
São Lourenço, Pernambuco (one)	63	44½
Santo Amaro, Bahia (two)	64, 67	44, 44
Bahia (two)	63½, 65	44, 44
Rio de Janeiro (two)	64, 65	44, 45
<i>D. cayana paraguayensis</i>		
Maranhão (two)	68, 68	46, 47
Ceará (four)	67, 68, 68, 69	46, 47, 49, 50
Goyaz City (five)	67, 68, 68, 69, 71	46, 47, 47, 49, 50
São Paulo (seven)	67, 68, 69, 69, 69, 70, 70	44-47
Minas Geraes (four)	70, 70, 71, 71	46, 48, 48, 50
Matto Grosso (two)	70, 70	47, —
Sapucay, Paraguay (two)	68, 70	47, 47

37. *Atleodacnis speciosa speciosa* (Temminck).

Sylvia speciosa (Wied MS.) Temminck, Nouv. Rec. Pl. Col., livr. 49, pl. 293, fig. 2, 1824—Rio de Janeiro.

¹Traité d'Orn., p. 458, 1831—"Brésil"—Rio (type in Paris Museum examined).

Dacnis speciosa Reiser, pp. 86, 187—Parnaguá, Pedrinha, Burity, below União and Queimadas, Rio Parnahyba, Piahy.

Maranhão: Barra do Corda, two ♀ ♀, Aug. 13, 18, 1924; Codó, Cocos, two ♀ ♀, June 18, July 11, 1924.

Piahy: Deserto, ♂ ad., Apr. 15; Ibiapaba, ♂ ad., Jan. 7, 1925.

Additional specimens.—Piahy: Burity, ♂ ad., ♀ ad., June 14; Queimadas ♂ ad., Sept. 2; Parnaguá ♀, May 18; Pedrinha ♀ ad., May 23; below União ♀ ad., Aug. 27, 1903. O. Reiser (Vienna Museum).

There is no difference, so far as I can see, between this series and other specimens from Bahia, Minas Geraes, Rio de Janeiro, Matto Grosso, and eastern Bolivia (*D. analis* Lafr. and d'Orb.). An example from the Island of Marajó is likewise typical of this form, being very much paler than the Amazonian *A. speciosa amazonum* Hellm.¹

38. *Ateleodacnis bicolor* (Vieillot).

Sylvia bicolor Vieillot, Hist. Nat. Ois. Sept., 2, p. 32, pl. 90 bis, 1807(?)—"très rarement sous la zone boréale et plus communément entre les tropiques"; we suggest Cayenne as type locality.²

Dacnis plumbea (not *Sylvia plumbea* Latham) Reiser, pp. 86, 187—Amaração, coast of Piahy.

Maranhão: Mangunça Island, ♂ ad., ♂ juv., March 10, 19, 1924.

Brazilian specimens (large series from Rio de Janeiro, Bahia, near Pará, and Rio Madeira) are identical with thirty-five from French and British Guiana. Birds from Trinidad and the north coast of Venezuela average slightly paler above, while a single (unsexed) adult from the Napo region, Ecuador, is remarkably small.

This species is found only in the mangrove thickets (*Rhizophora mangle*) along the seashore and river banks.

39. *Cyanerpes cyanea cyanea* (Linnaeus).

Certhia cyanea Linnaeus, Syst. Nat., 12th ed., 1, p. 188, 1766—based on Edwards, Brisson, etc.; Surinam accepted as type locality (see Hellmayr, Nov. Zool., 13, p. 9, 1906).

Maranhão: Tranqueira, two ♂ ♂ ad., Sept. 3, 15, 1925; São Luiz, ♂ ad., Aug. 14, 1923; Rosario, three ♂ ♂ juv., three ♀ ♀ ad., Apr. 23, 24, May 9, 16, 17, 1924.

¹Verh. Orn. Ges. Bay., 13, p. 106, 1917—Tarapoto, Peru.

²The type in the Paris Museum, said to be from "North America," I found to agree with a series from Cayenne and other localities in French Guiana.

These specimens, like others from various parts of Brazil south of the Amazon (Pará, Bahia, Matto Grosso), appear to me inseparable from typical *cyanea*, as represented by a series from the three Guianas, although their bills are generally rather shorter and slenderer. If the form is worthy of recognition, a name for it exists in *Arbelorhina brevipes* Cabanis,¹ as I have ascertained by examination of the type specimen in the Heine Collection. The type, purchased from a dealer by the name of Polly, is labeled "Porto Cabello, Venezuela." This is, however, an obvious mistake, since the bird, in color and measurements, agrees with Pará and Bahia skins, being much smaller and darker blue on the crown than the north-Venezuelan race, *C. cyanea eximia* (Cab.).² Judging from its make, I should say it is a Brazilian trade skin.

[40. *Cyanerpes caerulea caerulea* (Linnaeus).

Certhia caerulea Linnaeus, Syst. Nat., 10th ed., 1, p. 118, 1758—based on Edwards, Surinam.

Cyanerpes coerulea Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 60, 1926—Tury-assú, Maranhão.

The specimen recorded by Madame Snethlage extends the known range of this species from the Pará district to northern Maranhão.]

41. *Coereba luteola chloropyga* (Cabanis).

Certhiola chloropyga Cabanis, Mus. Hein., 1, p. 97, 1850—Bahia.

Coereba chloropyga Reiser, pp. 86, 187—Lagôa Missão, near Parnaguá, Piahy.

Maranhão: São Luiz, ♂ ad., two ♀ ♀ ad., July 26, Aug. 2, 10, 1923; Barra do Corda, ♀ ad., Aug. 9, 1924.

Ceará: Varzea Formosa, ♂ ad., Feb. 19, 1925.

Additional specimens.—Piahy: Lagôa Missão, ♀ ad., May 29, 1903. O. Reiser (Vienna Museum).—Ceará: Serra de Baturité, ♂ ad., July 21, 1913. R. H. Becker.—Maranhão: Miritiba, two ♂ ♂ ad., ♀ juv., Apr. 1, Sept. 3, Dec. 12, 1907. F. Schwanda (Munich Museum).

Birds from northern Brazil, including a number from near Pará, are identical with a topotypical series from Bahia and other specimens from Espirito Santo (Victoria) and Rio de Janeiro. Specimens

¹Mus. Hein., 1, p. 96, 1850.

²*Arbelorhina eximia* Cabanis, Mus. Hein., 1, p. 96, 1850—Puerto Cabello (types examined).

from southern Brazil (Minas Geraes, São Paulo, Santa Catharina, Rio Grande do Sul) and Misiones, while not different in coloration, average slightly larger, but the variation, to my mind, is too insignificant to warrant the recognition of a separate form (*C. l. majuscula*¹). Certain individuals, regardless of locality, are indistinguishable from the Matto Grosso race (*C. l. alleni* Lowe²), the validity of which still appears to me somewhat questionable.

42. *Cyanocorax cyanopogon* (Temminck).

Corvus cyanopogon Temminck, Nouv. Rec. Pl. Col., livr. 29, pl. 169, 1822—Bahia, Brazil.

Cyanocorax cyanopogon Reiser (2), p. 173, 1925—Piauhy.

Maranhão: Rosario, ♂ ad., four ♀ ♀ ad., ♀ juv., May 4, 6, 14, 15, 16, 1924; Codó, Cocos, ♂ ad., June 25, 1924.

Piauhy: Ibiapaba, two ♀ ♀ ad., Dec. 26, 1924.

Additional specimens.—Maranhão: Miritiba, ♀ ad., Oct. 2, 1909. F. Schwanda.—Ceará: Quixada, three ♂ ♂, ♀, June 20, 23, 24, 27; Juá, near Iguatú, three ♀ ♀ ad., Aug. 12, 20, 1913. R. H. Becker.

This is another characteristic species of the central-Brazilian plateau, ranging from Maranhão, Piauhy, and Ceará south to Bahia, southern Goyaz (Rio Paranahyba), and western Minas Geraes (Lagôa Santa; Nas Furnas; Rio Jordão, near Araguay).

Farther south and west, in the states of São Paulo and Matto Grosso, it appears to be represented by the obviously specifically different *C. chrysops chrysops* (Vieillot).

43. *Uroleuca cristatella* (Temminck).³

Corvus cristatellus Temminck, Nouv. Rec. Pl. Col., livr. 33, pl. 193, 1823—Brazil.

Uroleuca cyanoleuca Reiser, pp. 79, 173—Fazenda Riacho da Varzea Grande, Santo Antonio de Gilboez, and Santa Philomena, Piauhy.

Maranhão: Fazenda Inhuma, Alto Parnahyba, three ♂ ♂ ad., ♀ ad., July 15, 16, 17, 21, 1925.

The Pega Jay is likewise restricted to the central-Brazilian plateau region, though its range does not quite coincide with that of the

¹*Certhiola majuscula* Cabanis, Journ. Orn., 13, p. 413, 1865—Montevideo and the extreme south of Brazil (the type, No. 8170, Berlin Museum, is from Guaringuetá, São Paulo).

²Ibis, (9), 6, p. 506, 1912.

³*Corvus cyanoleucus* Wied (Reise Brasil., 2, p. 190, 1821—Fazenda Valo, near the border line of Minas Geraes, Bahia) is rendered untenable by *Corvus cyanoleucus* Latham (Ind. Orn., Suppl., p. XXV, 1801—New South Wales).

preceding species. While less extensive in the north, where it merely encroaches on the extreme south of Maranhão and Piauí, it includes, on the other hand, the states of Matto Grosso and São Paulo.

Birds from the Rio Preto, Bahia and Chapada, Matto Grosso agree with those from Maranhão.

[44. *Ostinops decumanus* (Palla) subsp.

Xanthornus decumanus Pallas, Spicil. Zool., fasc. 6, p. 1, 1769—Surinam.

Ostinops decumanus Reiser, pp. 79, 174—Castelliano, Barra do Cocal, and below União, Rio Parnahyba, Piauí.

No material being available from northern Brazil, the correct identification of the subspecific form of the Recongo must be left in abeyance. Birds from southern Brazil (Espírito Santo to Santa Catharina) differ from the two recognized races, *O. d. decumanus*, of northern South America, and *O. d. maculosus* Chapman,¹ of Bolivia and adjoining parts of Brazil and Peru, in much brighter and decidedly bottle green gloss of their entire plumage. Six specimens are quite uniform in this respect, and not one of them shows any trace of reddish brown edges on back or upper wing coverts.]

45. *Archiplanus solitarius* (Vieillot).

Cassicus solitarius Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 5, p. 364, 1816—based on Azara, No. 58, Paraguay.

Amblycercus solitarius Reiser, pp. 80, 174—Therezina, Piauí: Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 61, 1926—São Bento, Maranhão.

Ceará: Juá, near Iguatú, ♀ ad., Aug. 30, 1913. R. H. Becker.

This Cacique has an extensive distribution, ranging from northern Argentina north to the Amazon.

About its generic allocation, see Todd, Proc. Biol. Soc. Wash., 37, p. 114, 1924, and Wetmore, Bull. U. S. Nat. Mus., 133, pp. 389-390, 1926.

46. *Cacicus cela* (Linnaeus).

Parus cela Linnaeus, Syst. Nat., 10th ed., 1, p. 191, 1758—"in Indiis," errore; Surinam substituted as type locality by Hellmayr (Nov. Zool., 13, p. 20, 1906).

Cassicus cela Reiser, pp. 80, 174—Tronco Falls, below Nova York and Therezina, Piauí.

Maranhão: São Bento, ♀ ad., Sept. 5, 1923.

Goyaz: Philadelphia, ♂ ad., ♂ juv., Nov. 25, 1925.

¹Proc. Biol. Soc. Wash., 33, p. 26, 1920—Yungas of Cochabamba, Bolivia.

Additional specimens.—Maranhão: Miritiba, ♂ ♀ ad. F. Schwanda (Munich Museum).

A widely distributed species whose range extends throughout the greater part of northern Brazil south to about 16° s. latitude.

47. *Molothrus bonariensis bonariensis* (Gmelin).

Tanagra bonariensis Gmelin, Syst. Nat., 1, (2), p. 898, 1789—based on Daubenton, Pl. Enl. 710, Buenos Aires.

Molothrus bonariensis sericeus Reiser (1), p. 80, 1910—below União, Rio Parna-hyba and littoral of Piahy.

Molothrus bonariensis Reiser (2), p. 175, 1925—Burity, near Parnaguá, União, and littoral of Piahy.

Maranhão: São Bento, juv., Sept. 14, 1923.

Piahy: Ibiapaba, ♂ ad., (♀) ad., Dec. 20, 22, 1924.

Additional specimens.—Ceará: Quixada, two ♂♂ ad., June 25; Juá, near Iguatú, ♂ ad., Sept. 3, 1913. R. H. Becker.

Birds from Maranhão and neighboring states agree in size with the southern *M. b. bonariensis*,¹ being considerably larger than *M. b. minimus* Dalmas,² whose range extends as far as the Pará district (Cajetuba).

48. *Molothrus badius fringillarius* (Spix).

Icterus fringillarius Spix, Av. Bras., 1, p. 68, pl. 65, 1824—"Minas Geraes," errore; I substitute Oeiras, Piahy (types in Munich Museum examined).

Piahy: Ibiapaba, two ♀♀ ad., Dec. 22, 29, 1924.

Additional specimen.—Ceará: Quixada, ♂ ad., June 23, 1913. R. H. Becker.

Although widely separated geographically, this is clearly but a race of *M. badius*, differing merely by paler, more sandy coloration of the body plumage, lighter rufous wing area, and darker sides of the head.

M. b. fringillarius has a rather restricted range, having so far been found only in the states of Bahia (Rio São Francisco), Pernambuco, Ceará, and Piahy. The original locality, "Minas Geraes," is evidently a mistake. Burmeister never met with the species in that part of Brazil nor did Lund or Reinhardt.

¹*M. bonariensis sericeus* (Licht.), which I sought to revive (see Abhandl. 2 Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 613-614, 1906) is apparently not separable.

²This name stands for the small northern race, since Merrem (in Ersch and Gruber, Allg. Encycl. Wiss., 15, p. 276, 1826), by redescribing *T. bonariensis* as *Cassicus* (*T.*) *atronitens*, renders *Molothrus atronitens* Cabanis 1848 unavailable.

49. *Agelaius ruficapillus frontalis* Vieillot.

Agelaius frontalis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 34, p. 545, 1819—Cayenne.

Agelaeus frontalis Reiser, pp. 80, 175—Therezina, Piauhy.

Maranhão: São Bento, ♂ ad., Sept. 14, 1923.

Piauhy: Ibiapaba, two ♂♂ ad., Jan. 7, 15, 1925.

Agreeing with skins from Bahia and Ceará. Two topotypical males from Cayenne are also very similar except that the black frontal margin is perhaps slightly narrower.

A. r. frontalis is merely a race of *A. r. ruficapillus*, of Paraguay, Argentina, and southern Brazil, the only point of distinction being the lighter (hazel or kaiser brown instead of chestnut brown) coloration of the crown, throat and foreneck, and replaces it in the northeastern states of the republic, from Bahia to Maranhão and Pará, whence it ranges northward to French Guiana.

[50. *Agelaius cyanopus* Vieillot.

Agelaius cyanopus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 34, p. 552, 1819—based on Azara, No. 71, Paraguay.

Agelaeus cyanopus Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 61, 1926—São Bento, Maranhão.

A single specimen was obtained by Madame Snethlage at São Bento, Maranhão. The species ranges from Argentina and southern Brazil north to the lower Amazon.]

51. *Leistes militaris militaris* (Linnaeus).

Tanagra militaris Linnaeus, Syst. Nat., 10th ed., 1, p. 178, 1758—"in America, Asia"; Surinam designated as type locality, auct. Berlepsch and Hartert (Nov. Zool., 9, p. 33, 1902).

Leistes militaris Reiser (1), p. 100, 1910—Miritiba, Maranhão.

Leistes guianensis Reiser (2), p. 176, 1925—Miritiba.

Maranhão: Tury-assú, ♀ ad. (very worn), Oct. 24, 1923; Man-gunça Island, ♂ ad., Feb. 24, 1924; São Bento, two ♂♂ ad., three ♀♀, Aug. 28, 30, Sept. 1, 14, 1923.

Additional specimens.—Maranhão: Miritiba, ♂ ♀ ad., Apr. 19, 27, 1907. F. Schwanda (Vienna Museum).

Identical with specimens from Surinam and Rio Branco, northern Brazil.

The coast region of Maranhão appears to form the southern limit of its range in eastern Brazil.

52. *Leistes militaris superciliaris* (Bonaparte).

Trupialis superciliaris Bonaparte, Consp. Av., 1, p. 430, 1850—"Mexico," errore.¹

Ceará: Quixada, ♂ ad., June 25, 1913. R. H. Becker.

Agreeing with skins from Pernambuco and Matto Grosso. No representative of this group has yet been recorded from either Piauhý or inner Maranhão, though the present form is likely to occur there.

53. *Icterus cayanensis tibialis* Swainson.

Icterus tibialis Swainson, Anim. Menag., p. 302, Dec., 1837—Brazil.

Pendulinus tibialis Reiser (1), p. 80, 1910—Parnaguá, Piauhý.

Icterus (Pendulinus) tibialis Reiser (2), p. 176, 1925—Parnaguá.

Maranhão: Rosario, ♀ ad., May 19, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 24, 1925.

Piauhý: Arára, ♂ ad., Jan. 21, 1925; Ibiapaba, ♂ ad., ♀ ad., Dec. 16, 1924, Jan. 13, 1925.

Ceará: Varzea Formosa, ♀ ad., Feb. 23, 1925.

Additional specimens.—Maranhão: Miritiba, two ♂♂ ad., ♀ ad., Sept. 17, 1907. F. Schwanda (Munich Museum).—Ceará: Juá, near Iguatú, three ♂♂, two ♀♀ ad., Aug. 10, 16, 30, Sept. 2; Quixada, ♂♀ ad., June 22; Serra de Baturité, two ♂♂, ♀ ad., July 14, 15, 16, 1913. R. H. Becker.

Two skins from Pernambuco and all of the above specimens, with one exception (No. 63374, Fazenda Inhuma), have the axillaries, under wing coverts, and thighs *bright yellow*; only in two from Ceará and the Rosario bird some of the tibial feathers are spotted or tipped with black. In birds from Bahia (Lamarão; Macaco Secco, near Andarahy) and the female from Fazenda Inhuma, the thighs are black, tipped with yellow to a variable degree. Of two males from São Marcello, on the Rio Preto, in northwestern Bahia, one (No. 43257), in the amount of yellow on the tibial feathers, approaches the series from Ceará and Piauhý and also resembles it in bright yellow under wing coverts; the other example (No. 53256) has the thighs wholly, and the axillaries partly, black, thus pointing to *I. cayanensis valencio-buenoi* Ihering,² of Minas Geraes, Goyaz, and northern São Paulo. While it seems probable that two forms are involved, it would be unwise to propose any further subdivision,

¹I could not find the type in the collections of the Muséum d'Histoire Naturelle at Paris, and I suppose it is preserved in the Leiden Museum.

²Rev. Mus. Paul., 5, p. 268, 1902—Piracicaba and Jaboticabal, São Paulo.

until the type of *I. tibialis* can be reexamined, although Swainson's description, "thighs and shoulder covers, both above and beneath, pure yellow," fits the *northern* bird much better.

54. *Icterus jamacaii* (Gmelin).

Oriolus jamacaii Gmelin, Syst. Nat., 1, (1), p. 391, 1788—based on Brisson (ex Marcgrave), Orn., 2, p. 120, 1760, northeastern Brazil; we suggest Ceará.

Icterus jamacaii Reiser, pp. 80, 177—Parnaguá and Rio Parnahyba, Piauhý.

Maranhão: Codó, Cocos, two ♀ ♀ ad., July 5; Barra do Corda, ♂ ad., Aug. 13, 1924.

Piauhý: Ibiapaba, ♂ ♀ ad., Dec. 27, 31, 1924.

Additional specimens.—Ceará: Juá, near Iguatú, two ♂ ♂ ad., Aug. 16, 23; Serra de Baturité, ♂ ♀ ad., July 14, 19; Quixada, two ♂ ♂, ♀ juv., June 18, 22, July 2, 1913. R. H. Becker.

Identical with specimens from various parts of Bahia (Santo Amaro; Macaco Secco, near Andarahy; Rio do Peixe, near Queimadas) in Field Museum.

This beautiful Oriole is restricted to eastern Brazil, ranging from Ceará, Piauhý, and Maranhão south to about 18° s. lat. in Bahia and Minas Geraes, while farther west, in the state of Goyaz, it is replaced by *I. croconotus*.¹

55. *Gnorimopsar chopi sulcirostris* (Spix).

Icterus sulcirostris Spix, Av. Bras., 1, p. 67, pl. 64, fig. 2, 1824—"in campis Minas Geraes," errore. we substitute Oeiras, Piauhý.

Aphobus chopi (not *Agelaius chopi* Vieillot) Reiser (1), p. 81, 1910—Bôa Vista, below Chique Chique, Rio São Francisco, Bahia and Amaração, Piauhý (spec. examined).

Gnorimopsar sulcirostris Reiser (2), p. 177, 1925—same localities.

Maranhão: Codó, Cocos, ♂ ad., ♀ ad., June 14, 19, 1924.

Piauhý: Ibiapaba, ♂ ad., Jan. 15, 1925.

The Codó birds are in perfectly fresh plumage, having just finished their annual molt excepting the outermost primary which has not yet attained its full length and still shows traces of its sheath. They have been directly compared and found identical with the type of *I. sulcirostris* in the Munich Museum. The adult male has about the same wing measurement, but a slightly longer tail, while the female is somewhat smaller on the wing. The three specimens have the body

¹See Hellmayr, Nov. Zool., 15, p. 39, 1908.

plumage much glossier than a considerable series of *G. c. chopi*. However, birds in worn condition, like our male from Ibiapaba and an adult female from Bôa Vista, below Chique Chique, in the Vienna Museum, in this respect are hardly different from the typical race.

G. chopi sulcirostris has a peculiarly restricted range. In addition to our own specimens, I have seen an adult male from Ceará, secured by Madame Snethlage on May 17, 1910; a young male obtained by O. Reiser at Amaração, coast of Piahy, Sept. 15, 1903; and an adult female taken by the same naturalist at Bôa Vista, below Chique Chique, on the Rio São Francisco, in northern Bahia. The last-named locality is evidently not far from the southern limit of its breeding area, since two females from Macaco Secco, near Andarahy, central Bahia, in Field Museum collection are inseparable from typical *chopi*, widely diffused in southern and central Brazil. Although Spix indicates "Minas Geraes" as habitat of *I. sulcirostris*, this is obviously a mistake. Specimens from this state (Lagôa Santa; São João d' El Rey; Agua Suja, near Bagagem; and Rio Jordão, near Araguay) are clearly referable to the small typical race, agreeing in size and dull gloss with others from Paraguay, São Paulo, Matto Grosso, and Goyaz (Leopoldina, Rio Araguay).

G. chopi sulcirostris thus would seem to be confined to the states of Maranhão, Piahy, and Ceará, ranging south to the São Francisco in northern Bahia, unless *Aphobus megistus* Leverkühn¹ from Bolivia proves to be identical.

MEASUREMENTS

<i>G. chopi sulcirostris</i>	Wing	Tail	Bill
The unsexed type	152	108	25
One adult male from Maranhão	150	114	25
One adult male from Piahy	140	108	24
One adult male from Ceará	142	106	25
One adult female from Maranhão	140	104	25
One adult female from near Chique Chique, Bahia	140	104	25
<i>G. chopi chopi</i>			
Five adults from Paraguay	117-126	90-98	21 ½-24
Eight from Minas Geraes	120-126	89-98	21 ½-23
Three from Matto Grosso	118-124	86-95	21-23
Two from Leopoldina, Goyaz	120-125	93-95	22
Two from Macaco Secco, near Andarahy, Bahia	126, 127	95, 100	22, 23 ½

[56. *Tanagra cayennensis* Gmelin.

Tanagra cayennensis Gmelin, Syst. Nat., 1, (2), p. 894, 1789—based on Brisson and Buffon, Cayenne.

Euphonia cayennensis Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 60, 1926—Tury-assú, Maranhão.

¹Journ. Orn., 37, p. 104, 1889—Santa Cruz and San Miguel, eastern Bolivia.

Madame Snethlage's record from Tury-assú extends the range of this Guianan species from the Pará region to northern Maranhão.]

57. *Tanagra violacea violacea* (Linnaeus).

Fringilla violacea Linnaeus, Syst. Nat., 10th ed., 1, p. 182, 1758—"in calidis regionibus" = Surinam (auct. Berlepsch and Hartert, Nov. Zool., 9, p. 18, 1902).¹

Euphonia violacea Reiser, pp. 100, 186—Miritiba, Maranhão.

Maranhão: Tury-assú, ♂ ad., three ♀ ad., Oct. 6, 10, Nov. 7, 15, 1923; Rosario, ♂ juv., May 9, 1924; São Luiz, ♂ ad., Aug. 1, 1923; Tranqueira, ♂ ad., Sept. 8, 1925.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Jan. 26, 1926.

The wings of the adult males (Goyaz) measure 55, 57, 59, 60, and do not materially differ from those of a Guianan series, one of which, from Paramaribo, has a wing fully 60 mm. long, while the others, in size, agree with the smaller specimens from Maranhão. It appears, therefore, that the inhabitants of the region forming the subject of this paper should be referred to the smaller northern race whose range quite possibly extends even as far south as Bahia.

58. *Tanagra chlorotica violaceicollis* (Cabanis).

Acroleptes violaceicollis Cabanis, Journ. Orn., 13, p. 409, 1865—Brazil.

Euphonia chlorotica violaceicollis Reiser (1), p. 85, 1910—Parnaguá and Lagôa Missão, Piauhý.

"*Euphonia minuta* Cab. (= *olivacea* Desm.)" (sic) Reiser (1), p. 100, 1910—Miritiba, Maranhão.

Euphonia aurea violaceicollis Reiser (2), p. 186, 1925—Parnaguá, Piauhý and Miritiba, Maranhão.

Maranhão: Tury-assú, two ♂ ad., Dec. 5, 1923, Jan. 5, 1924; Mangunça Island, ♂ ad., March 11, 1924; Codó, Cocos, ♀, June 16, 1924.

Piauhý: Ibiapaba, ♂ ad., ♀ ad., Jan. 15, 1925.

Ceará: Varzea Formosa, ♀ ad., Feb. 20, 1925.

Additional specimens.—Piauhý: Parnaguá, ♂ ad., May 15; Lagôa Missão, ♀ ad., May 29, 1903. O. Reiser (Vienna Museum).—

¹I am now inclined to concur with the view of the late Count Berlepsch (Verh. 5th Orn. Congr. Berlin, p. 1127, 1912) in the application of Linnaeus's specific name. At all events *Parus cyanochlorus* Pallas (in Vroeg's Cat. Coll. Ois., Adumbr., p. 3, 1764—Surinam) would long antedate *Phonasca Lichtensteinii* Cabanis, 1860.

Ceará: Juá, near Iguatú, ♂ ad., Aug. 15; Serra de Baturité, ♂ ad., ♂ (first annual), July 15, 21, 1913. R. H. Becker.

In Nov. Zool., 30, pp. 233-235, 1923, I have discussed, at some length, the characters and distribution of this form, and the material now received from northeastern Brazil does not throw much new light on the subject. The males from Ceará and Ibiapaba, in size and color, agree with others previously examined from the same general region. The three from the coast of Maranhão, on the other hand, are decidedly smaller (wing 53, 54, 57), while the yellow of the forehead and under parts is slightly deeper in tone. I am quite unable to distinguish them satisfactorily from typical *chlorotica*, of which, however, but two Cayenne skins are available for comparison. Of the three skins marked "female," one has a distinct whitish pectoral area; in the two others the whole of the lower surface is uniform yellow.

Pending the receipt of a sufficient series from French Guiana (*T. c. chlorotica*), the Brazilian form may provisionally stand under Cabanis's name, although its distinctness does not appear to be established beyond doubt.

59. *Tangara cyanocephala cearensis* Cory.

Tangara cyanocephala cearensis Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 345, 1916—Serra de Baturité, Ceará.

Ceará: Serra de Baturité, three ♂ ad., ♂ juv., ♀, July 15, 16, 18, 21, 1913. R. H. Becker.—♂ ad.: Wing 64, 67, 69; tail 47, 49, 50; bill 10.

A very distinct form, differing in the male sex from the two other races by reason of deeper, more purplish blue crown; blackish upper throat; and long pale cerulean blue tips to the shorter upper tail coverts, the last named character being suggested even in immature birds. In dimensions, width of orange wing band, and intensity of nuchal collar, this form is nearer to *T. c. cyanocephala* (Müller), of southern Brazil than to *T. c. corallina* (Berlepsch),¹ of Bahia. *T. c. cearensis* is known only from the type locality.

60. *Tangara cayana flava* (Gmelin).

Tangara flava Gmelin, Syst. Nat., 1, (2), p. 896, 1789—based on "Guiraperea" Marcgrave, Hist. Nat. Bras., p. 212, northeastern Brazil; we suggest Ceará.

Maranhão: Codó, Cocos, ♀ ad., June 27, 1924; Barra do Corda, Ponto, ♀ ad., Sept. 3, 1924; Grajahú, ♂ ad., ♂ imm., ♀ ad., ♀ juv.,

¹*Calospiza cyanocephala corallina* Berlepsch, Ornith. Monatsber., 11, p. 18, 1903—Bahia.

Oct. 17, 23, 1924; São Francisco, ♂ ad., July 1, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 17, 1925; Tranqueira, three ♂ ad., ♀ ad., August 17, 22, 29, 31, 1925.

Ceará: Varzea Formosa, ♂ ♀ ad., Feb. 20, 26, 1925.

Goyaz: Philadelphia, ♂ ad., two ♂♂ juv., ♀ ad., Nov. 26, Dec. 1, 1925.

Additional specimens.—Ceará: Serra de Baturité, five ♂♂ ad., ♀ ad., ♀ imm., July 12, 13, 17, 18, 21, 22, 1913. R. H. Becker.

In the light of this material, the characters of *T. cayana chloroptera* (Vieillot) appear to be much less pronounced than I realized, when discriminating this southern race.¹ Birds from the interior of Maranhão are certainly indistinguishable from those of Bahia (Santo Amaro; São Marcello, Rio Preto), so far as coloration is concerned, and in dimensions there does not seem to exist any constant difference either, the wing varying, in both series, from 71-76 mm. Specimens from Ceará—which, in the absence of a definite type locality, we may take for typical *flava*—average rather larger (wing 75-80; tail 56-60, against 52-57), and fully attain the measurements of *chloroptera*, from Minas Geraes, São Paulo, and Paraná. The latter form, however, appears to be somewhat paler throughout, with the cinnamomeous tinge on the forehead, in the male sex, more strongly suggested. The examples from Philadelphia, Rio Tocantins, are perfectly similar to the others, showing no approach to *T. c. sincipitalis* (Berlepsch),² of southern Goyaz (Leopoldina and Goyaz City), which has a distinct tawny ochraceous frontal band, and the back strongly suffused with silvery green as in *T. c. margaritae* (Allen), of Matto Grosso.

As I have shown elsewhere,³ *T. cayana* and *T. flava* are merely races of a single specific unit.

61. *Thraupis episcopus episcopus* (Linnaeus).

Tanagra episcopus Linnaeus, Syst. Nat., 12th ed., 1, p. 316, 1766—based on Brisson, "Brésil" = Cayenne; Reiser, pp. 100, 185—Tapera and Miritiba, Maranhão.

Maranhão: Anil, near São Luiz, two ♂♂ ad., ♀, July 25, 28, Aug. 1, 1923; São Bento, ♂ imm., Sept. 8, 1923; Codó, Cocos, ♂ ad., June 12, 1924; Barra do Corda, ♀ ad., Sept. 27, 1924.

¹See Hellmayr Nov. Zool., 15, p. 27, 1908.

²*Calospiza formosa sincipitalis* Berlepsch Orn. 14, p. 348, Feb., 1907—Leopoldina, Rio Araguaya, Goyaz.

³Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, pp. 125-126, 1912.

Additional specimens.—Maranhão: São Luiz two, Miritiba three. F. Schwanda (Munich Museum).

Maranhão birds differ from a Guianan series by having generally stouter, larger bills, and some, notably the females from Barra do Corda, in this respect, closely approach *T. s. sayaca*. In the adult males there is an extensive bluish white humeral patch, while in the females and immature males the lesser upper wing coverts only are margined with pale methyl blue, varying in shade and extent. The adult male from Cocos (Codó) is as small-billed as the general run of *episcopus*, and the (silvery) pallid methyl blue color of its shoulder patch is duplicated in certain examples from British Guiana. It is perhaps somewhat significant that the bird with the largest bill is from Barra do Corda, where Dr. Snethlage also secured a perfectly typical specimen of *T. s. sayaca*.

62. *Thraupis sayaca sayaca* (Linnaeus).

Tanagra sayaca Linnaeus, Syst. Nat., 12th ed., 1, p. 316, 1766—based on Brisson (ex Marcgrave), northeastern Brazil = Pernambuco.¹

Maranhão: Barra do Corda, ♀ ad., Aug. 16, 1924; São Francisco, ♂ ad., July 3, 1925.

Piahy: Ibiapaba, ♂ ♀ ad., Dec. 15, 16, 1924; Arára, ♀ ad., Jan. 22, 1925.

Ceará: Varzea Formosa, ♂ ♀ ad., ♀ juv., Feb. 20, 26, March 5, 1925.

Additional specimens.—Ceará: Serra de Baturité, ♂ ad., two ♀ ♀ ad., July 16, 19, 22, 1913. R. H. Becker.

The specimens from Maranhão agree with the rest of the series. In addition, we have many skins from various localities in Bahia, Rio (Therezopolis), São Paulo, and Matto Grosso.

63. *Thraupis palmarum palmarum* (Wied).

Tanagra palmarum Wied, Reise Bras., 2, p. 76, 1821—Canavieras, Bahia; Reiser, pp. 85, 186—Parnaguá and Ilha São Martin, Rio Parnahyba, Piahy.

Maranhão: Anil, near São Luiz, ♂ ♀ ad., Aug. 17, 21, 1923; São Bento, two ♀ ♀ ad., ♀ juv., Sept. 4, 7, 12, 1923; Barra do Corda, ♂ imm., Aug. 8, 1924; Codó, Cocos, ♀ ad., June 25, 1924.

Additional specimens.—Ceará: Serra de Baturité, ♂ ad., ♀ juv., July 14, 18, 1913. R. H. Becker.

¹See Naumburg, Auk, 41, p. 111, 1924.

These birds are somewhat smaller than a series from Bahia and Rio, but are not otherwise different. They agree best with specimens from the Pará district.

64. *Ramphocelus carbo carbo* (Pallas).

Lanius carbo Pallas in Vroeg, Cat. Coll. Ois., Adumbr., p. 2, 1764—Surinam.

Rhamphocelus jacapa connectens (not of Berlepsch and Stolzmann) Reiser (1), p. 85, 1910—part, Boa Vista, near Brejão (on the road from Santo Antonio de Gilboez to Santa Philomena) and Rio Taquarussú, Piahy.

Rhamphocelus jacapa centralis (not of Hellmayr) Reiser (2), p. 185, 1925—part, Brejão and near Santa Philomena.

Maranhão: Anil, near São Luiz, ♂ ad., ♀ ad., July 26, 28, 1923; Barra do Corda, ♂ ad., Aug. 19, 1924; Codó, Cocos, ♂ juv., ♀ ad., July 8, 11, 1924; São Francisco, two ♀ ♀ ad., July 3, 6, 1925.

Additional specimens.—Maranhão: Miritiba, ♂ ad. Aug. 4, 1907. F. Schwanda (Munich Museum).—Piahy: Santa Philomena, ♂ ad., July 15, 1903 (Berlepsch Collection); Rio Taquarussú, ♂ ad. July 10, 1903. P. Wachsmund (Tring Museum).

These specimens agree with a series from Guiana and Pará and, with the exception of an unusually large female from São Francisco, exhibit similar measurements, the wing ranging from 77 to 82 mm. Among the adult males we find the various types of coloration, also represented in a very satisfactory series from French and Dutch Guiana, some being strongly tinged with maroon both on the dorsal and ventral surfaces while others have the back mainly blackish with but a limited amount of dark red on upper wing coverts and rump.

South of the Serra de Tabatinga, on the Rio Preto in the north-western section of the state of Bahia, the typical race is obviously replaced by *R. carbo centralis* Hellmayr,¹ a larger, blacker form without any red on either wing or tail coverts. Two specimens taken by R. H. Becker at São Marcello, in March, 1914, appear to be indistinguishable from Minas Geraes and Matto Grosso skins.

No representative of this group has been recorded from Pernambuco or Ceará.

65. *Piranga flava saira* (Spix).

Tanagra saira Spix, Av. Bras., 2, p. 35, pl. 48, fig. 1, 1825—Brazil² (type in Munich Museum examined; = female).

¹Arch. Naturg., 85, A, Heft 10, p. 26, 1920—Agua Suja, near Bagagem, Minas Geraes, Brazil.

²Count Berlepsch (Verh. 5th Orn. Kongr., p. 1063, 1912) suggested as terra typica Rio de Janeiro, where the species, being an inhabitant of open country,

Pyranga saira Reiser, pp. 85, 185—Santo Antonio de Gilboez, Bandeira, Santa Maria, Fazenda Riachoêlo, and Santa Philomena, Piauhy.

Maranhão: Codó, Cocos, ♂ ♀ ad., June 20, July 11, 1924; Tranqueira, ♂ juv., Sept. 2, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ ♀ ad., July 27, Aug. 2, 1925.

Goyaz: Philadelphia, ♂ ad., Dec. 18, 1925.

Agreeing with specimens from Bahia (Rio Preto), Goyaz City, and São Paulo. Males vary a good deal in intensity of coloring within the same locality, the tone of the under parts ranging from deep scarlet to grenadine red, while the mantle shows corresponding differences. The distributional area of this species appears to extend, without noticeable racial variation, from the lower Amazon to Rio Grande do Sul. Three males from the last-named state (Camaquam, Pelotas, Linha Pirajá) average rather larger, while a single female from Santarém, in size and coloration, agrees with others from Bahia and Maranhão.

P. flava macconnelli Chubb,¹ of which we have a small series from British Guiana (Quonga, Annai) and the Serra da Lua, on the upper Rio Branco, is somewhat lighter in coloration, the male sex varying from grenadine red to flame scarlet, whereas the females are paler below, wax yellow rather than primuline yellow. The race, however, is not a well-marked one, and two examples from the Serra de Ereré, near Monte Alegre, north bank of the lower Amazon, which one would expect to be referable to the northern form, are hardly distinguishable from typical *saira*.

66. *Tachyphonus rufus* (Boddaert).

Tanagra rufa Boddaert, Tabl. Pl. Enl., p. 44, 1783—based on Daubenton, Pl. Enl. 711, Cayenne.

Tachyphonus melaleucus Reiser (1), p. 84, 1910—Santa Philomena, Apertada Hora, Therezina, São Gonçalinho, and União, Piauhy.

Tachyphonus rufus Reiser (2), p. 185, 1925—Rio Parnahyba, Piauhy.

Maranhão: Tury-assú, ♀ ad., Oct. 10; São Bento, ♀ ad., Sept. 4, 1923; Tranqueira, ♂ ad., two ♀ ♀, Aug. 24, 27; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 17, 1925.

Ceará: Varzea Formosa, ♂ ad., Feb. 24, 1925.

is very unlikely to occur, however. We propose Caxias, Piauhy, as a more appropriate type locality.

¹Ann. Mag. Nat. Hist., (9), 8, p. 446, 1921—Upper Takutú Mts., British Guiana.

Additional specimens.—Maranhão: Miritiba, two ♂♂, two ♀♀ ad. F. Schwanda (Munich Museum).

I am unable to separate these and other Brazilian specimens from a topotypical Cayenne series. In eastern Brazil, this species ranges as far south as Bahia, whence we have a number of skins secured by R. H. Becker at Macaco Secco, near Andarahy. Farther south, in the states of Espírito Santo and Rio de Janeiro, it is replaced by *T. coronatus* (Vieillot).

The distribution of these two species, which may prove to be representative forms, I have discussed in Nov. Zool., 30, p. 228, 1923.

67. *Tachyphonus cristatus brunneus* (Spix).

Tanagra brunnea Spix, Av. Bras., 2, p. 37, pl. 49, fig. 2, 1825—Rio de Janeiro (= ♂ juv.).

Maranhão: Tury-assú, ♂ ad., ♂ juv., two ♀♀, Nov. 15, 19, 22, 1923.

The adult male, like others from the Pará district, has the gular patch generally rather larger than a series from eastern Brazil (Pernambuco to São Paulo), with the wings perhaps, on the average, slightly longer.

MEASUREMENTS OF ADULT MALES

	Wing	Tail
Pará district (four)	78,80,81,84	70,72,74,78
Maranhão (one)	80	71
Pernambuco (two)	80,81	73,74
Bahia (five)	76,77½,79,79,80	73,74,75,75,77
Rio de Janeiro (four)	72,74,75,79	72,72,74,78
São Sebastião, São Paulo (three)	77,77½,79	74,74½,76

T. cristatus brunneus is peculiar to the wooded coast region of eastern Brazil (from Pará to São Paulo).

68. *Eucometis penicillata penicillata* (Spix).

Tanagra penicillata Spix, Av. Bras., 2, p. 36, pl. 49, fig. 1, 1825—Brazil, no locality specified (type in Munich Museum examined).

Maranhão: Tury-assú, two ♂♂ ad., ♀ ad., Oct. 15, 16, 27, 1923.

Agreeing with specimens from the Pará region (Rio Acará and Mexiana Island). The species is new to Maranhão, where it obviously reaches the eastern limit of its range, which is also extended to the lower Rio Branco by a specimen in our collection, obtained by the late M. P. Anderson on November 20, 1912.

(See Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, pp. 12-13, 1912.)

69. *Cypsnagra hirundinacea pallidigula* Hellmayr.

*Cypsnagra ruficollis*¹ *pallidigula* Hellmayr, Nov. Zool., 14, p. 350, 1907—Humaythá, Rio Madeira, Brazil; Reiser (2), p. 185, 1925—Santo Antonio de Gilboez, Piauhý.

Cypsnagra ruficollis (not of Lichtenstein) Reiser (1), p. 84, 1910—Santo Antonio de Gilboez, Piauhý.

Maranhão: Codó, Cocos, three ♀ ♀ ad., June 25, 1924; Ponto (Canella), ♂ imm., Aug. 31, 1924; Barra do Corda, ♂ ♀ ad., Sept. 1, 1924; Fazenda Inhumana, Alto Parnahyba, ♀ ad., July 29, 1925.

Goyaz: Philadelphia, ♂ ad., ♀ juv., Dec. 11, 1925.

Additional specimens.—Piauhý: Santo Antonio de Gilboez, ♀ ad., ♀ imm., July 1, 1903. O. Reiser (Vienna Museum).

The series fully substantiates the validity of this race, originally based upon two specimens from the Rio Madeira, and differs from *C. h. hirundinacea* by lacking the cinnamon buff on the flanks² and under tail coverts, and by having a whiter rump and much paler throat. The latter, instead of being tawny or tawny ochraceous, is light or warm buff, approaching ochraceous buff on the lateral portions in two or three examples. The bill, as a rule, is somewhat stouter, while the posterior under parts are less tinged with buffy. Even the young bird is easily distinguishable from the corresponding plumage of the typical form.

The range of *C. h. pallidigula*, according to our present knowledge, extends from northeastern Brazil (Ceará, Piauhý, Maranhão) through northern Goyaz across the continent to the banks of the Rio Madeira (Humaythá) and its tributaries, at least as far south as the headwaters of the Jamary, in northern Matto Grosso (whence the American Museum of Natural History, New York, possesses a perfectly typical adult male, secured by G. K. Cherrie during the Roosevelt Expedition on Feb. 16, 1914, at Campos Novos, near the base of the Serra do Norte, 13° s. lat.), and west into northern Bolivia.³

¹*Tanagra ruficollis* Lichtenstein (Verz. Dubl. Berliner Mus., p. 30, 1823—São Paulo) being preoccupied by *Tanagra ruficollis* Gmelin (Syst. Nat., 1, (2), p. 894, 1789—Jamaica), *Tanagra hirundinacea* Lesson (Traité d'Orn., p. 460, 1831—"Brésil") becomes the proper specific name of the species.

²Faintly suggested in the Santo Antonio de Gilboez examples.

³The only Bolivian specimen that I have seen is an adult collected by Dr. H. H. Rusby and labeled—no doubt erroneously—"Yungas, s. 18°, 6000 ft." (American Museum of Natural History, No. 30591). It more likely came from Reyes, in the plains of northern Bolivia. In the eastern section of that republic the tawny-throated *C. h. hirundinacea* takes its place, as is shown by several skins obtained by d'Orbigny in Chiquitos (see Hellmayr, Nov. Zool., 30, p. 230, 1923).

In the east, the pale-throated form apparently ranges southward into Bahia, for I have seen two trade skins in the Berlepsch collection; but as other Bahia skins at Tring and in the British Museum are referable to *C. h. hirundinacea*, their exact ranges in that state are still to be determined.

70. *Hemithraupis guira guira* (Linnaeus).

Molacilla guira Linnaeus, Syst. Nat., 12th ed., 1, p. 335, 1766—based on Marcgrave's "Guiraguaçu-beraba," northeastern Brazil.

Nemosia guira Reiser (1), p. 84, 1910—Burity, Castelliano, Therezina, and Queimadas, Piauhý.

Hemithraupis guira Reiser (2), p. 184, 1925—same localities.

Maranhão: Tury-assú, ♂ ad., Nov. 23, 1923; Codó, Cocos, ♂ ad., three ♀ ♀, June 13, 20, July 9, 10, 1924.

Piauhý: Ibiapaba, ♂ ad., Dec. 24, 1924.

Goyaz: Philadelphia, juv., Dec. 16, 1925.

Additional specimens.—Piauhý: Rio Julgua, ♂ ad., July, 1903. P. Wachsmund (Tring Museum); above Castelliano, ♀ ad., Aug. 11, 1903. O. Reiser (Vienna Museum).

These examples, which are practically topotypes, agree with others from Bahia. Birds from Goyaz City, western Minas Geraes (Bagagem), northern São Paulo (Rio Paraná), and Matto Grosso, while identical in coloration, average larger, and certain specimens, in dimensions, approach *H. guira fosteri* (Sharpe), of Paraguay and Misiones, which may be distinguished, however, by the wide yellow frontal band.

71. *Nemosia pileata pileata* (Boddaert).

Tanagra pileata Boddaert, Tabl. Pl. Enl., p. 45, 1783—based on Daubenton, Pl. Enl. 720, fig. 2, Cayenne.

Nemosia pileata Reiser, pp. 84, 184—Burity (near Parnaguá), Bandeira (near Santo Antonio de Gilboez), and Castelliano, Rio Parnahyba, Piauhý.

Maranhão: Mangunça Island, ♂ ♀ ad., March 10, 12, 1924; Codó, Cocos, three ♂ ♂ ad., three ♀ ♀ ad., June 11, 12, 14, 17, July 10, 1924.

Piauhý: Ibiapaba, ♂ ad., Dec. 17, 1924.

Additional specimens.—Maranhão: Miritiba, ♀ ad. F. Schwanda (Munich Museum).—Piauhý: Castelliano, ♂ juv., Aug. 11; Bandeira,

♀ ad., July 4; Burity, near Parnaguá, ♀ ad., May 26, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, three ♂♂ ad., two ♀♀ ad., Aug. 18, 21, 1913. R. H. Becker.

There is so much individual variation in size that I consider it very difficult to maintain *N. p. paraguayensis* Chubb,¹ of Paraguay and Bolivia, although northern specimens very rarely reach the maximum measurements frequently attained in the south, as may be gathered from the following figures. In coloration, birds from various parts of the range are identical, excepting those from northern Colombia (*N. pileata hypoleuca* Todd)² and northeastern Peru (*N. pileata nana* Berlepsch),³ which constitute well-marked races, the former being recognizable by the absence of the grayish tinge on the sides, the latter by its darker, more purplish blue upper parts, darker bluish gray flanks, and smaller bill.

MEASUREMENTS OF ADULT MALES

	Wing	Tail
Cayenne, French Guiana (two)	66,69	46½, 47½
Paramaribo, Dutch Guiana (two)	68,68	45, 47
Mexiana Island, Brazil (one)	73½	49½
Marajó Island, Brazil (one)	71	50
Marmellos, Rio Madeira (three)	68, 70, 70	46, 47, 49
Monte Alegre, lower Amazon (one)	67	46
Maranhão (four)	70, 72, 73, 74	46, 49, 49, 50
Piauhy (one)	74	49
Juá, Ceará (three)	71, 72, 76	47, 50, 50
Bahia (fifteen)	63, 63, 66½, 67½, 68, 69 (four), 70, 72 (four), 73½	44-50
Pirapora, Minas Geraes (one)	74	52½
Matto Grosso (seven)	68, 69, 72 (two), 74 (two), 75	45, 48½, 49½, 50½, 51, 52, 52
Araguay, Goyaz (one)	73½	51
Todos Santos, Bolivia (two)	73, 74	47, 49
Chiquitos, Bolivia (one)	75	50
Trinidad, Paraguay (one)	75½	50
Embarcación, Salta (one)	73	51½

72. *Thlypopsis sordida sordida* (Lafresnaye and d'Orbigny).

Nemosia sordida Lafresnaye and d'Orbigny, Syn. Av., 1, in Mag. Zool., 7, cl. 2, p. 28, 1837—Yuracares, Bolivia (type in Paris Museum examined; =immature).

Thlypopsis sordida Reiser, pp. 84, 184—Bomfim (above Nova York), Caitetú, and São Gonçalinho, Rio Parnahyba, Piauhy; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 60, 1926—São Bento, Maranhão.

¹Ibis, (9), 4, p. 629, 1910—Sapucay, Paraguay.

²Proc. Biol. Soc. Wash., 29, p. 95, 1916—Tucurínca, Santa Marta district.

³Verh. 5th Orn. Kongr., p. 1084, 1912—Samiria, Peru (type examined).

Ceará: Juá, near Iguatú, ♀ ad., Sept. 4, 1913. R. H. Becker.

Brazilian birds, of which a fair series has been examined from Bahia, Minas Geraes (Agua Suja, near Bagagem), and Matto Grosso, are apparently not different from topotypical Bolivian skins.

73. *Compsothraupis*¹ *loricata* (Lichtenstein).

Tanagra loricata Lichtenstein, Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1816-17, p. 159, 1819—based on "Jacapu" Marcgrave, Hist. Nat. Bras., p. 192 (= ♂ ad.); we suggest Ceará.

Lamprotes loricatus Reiser, pp. 30, 184—Parnaguá, Burity, and below União, Rio Parnahyba, Piauhý.

Maranhão: São Francisco, ♂ ♀ ad., June 8, July 4, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., ♂ juv., Aug. 9, 13, 1913; Serra de Baturité, ♀ ad., July 12, 1913. R. H. Becker.

This striking bird is restricted to northeastern Brazil, ranging from northern Minas Geraes north to Ceará, Piauhý, and Maranhão, and west to the Rio Araguaya, Goyaz, where the late G. A. Baer obtained an adult male in August, 1906.² The most southerly locality on record is the Rio Ressaque, a tributary of the Rio Pardo, close to the northern boundary line of Minas Geraes.³

Besides the specimens listed above, Field Museum has three females from Macaco Secco, near Andarahy, and a single male from Rio do Peixe, near Queimadas, in the state of Bahia.

74. *Arremon taciturnus taciturnus* (Hermann).

Tanagra taciturna Hermann, Tab. Aff. Anim., p. 214, note, 1783—based on "L'Oiseau Silentieux" Buffon, Hist. Nat. Ois., 4, p. 304, and Daubenton, Pl. Enl. 742, Cayenne.

Arremon silens Reiser, pp. 8, 184—Santa Maria and Matinha, Piauhý.

Maranhão: Tury-assú, ♂ ad., Dec. 17, 1923; São Bento, ♂ ad., Sept. 10, 1923; Grajahú, ♀ ad., Oct. 24, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 23, 1925.

Ceará: Varzea Formosa, ♀ ad., March 1, 1925.

¹*Compsothraupis* Richmond (Proc. Biol. Soc. Wash., 28, p. 180, 1915), new name for *Lamprotes* Swainson 1837 (not of R. L. 1817).

²See Hellmayr, Nov. Zool., 15, p. 30, 1908.

³See "*Tanagra bonariensis*" Wied, Reise Bras., 2, p. 178, 1821, and Beitr. Naturg. Bras., 3, (1), p. 530, 1830.

Additional specimen.—Ceará: Serra de Baturité, ♀ ad., July 14, 1913. R. H. Becker.

With the material at hand, I am unable to separate east-Brazilian specimens from those of Guiana and the Orinoco region. The series sent by Snethlage have the backs of a brighter, more yellowish hue, but four Bahia skins do not diverge in this respect from typical Cayenne birds. It is, however, possible that birds from Maranhão and Bahia have more gray on the flanks.

A. t. taciturnus, widely distributed in the Guianan-Amazonian subregion, descends along the east coast of Brazil to the Rio Doce, in the state of Espirito Santo.

75. *Diucopsis fasciata* (Lichtenstein).

Tanagra fasciata Lichtenstein, Verz. Dubl. Berliner Mus., p. 32, 1823—São Paulo.

Diucopsis fasciata Reiser, pp. 83, 183—Santo Antonio de Gilboez, Santa Maria and Barroca do Maranhão, Piahy.

Maranhão: Barra do Corda, ♂ ad., Sept. 2, 1924; Fazenda Inhumá, Alto Parnahyba, ♂ imm., four ♀ ♀ ad., July 22, 30, 1925.

Identical with specimens from Matto Grosso (Chapada).

This species is peculiar to the campo region of Brazil, ranging from Maranhão and Piahy south to Minas Geraes (Lagôa Santa; Água Suja, near Bagagem) and São Paulo, west to Matto Grosso.¹

76. *Schistochlamys ruficapillus*² *capistratus* (Wied).

Tanagra capistrata Wied, Reise Bras., 2, p. 179, 1821—Fazenda Ilha, near Ressaque, southern Bahia.

Schistochlamys capistrata Reiser (1), p. 83, 1910—Corrientes, Rio Parnahyba and Santa Philomena, Piahy (spec. examined).

Schistochlamys ruficapilla capistrata Reiser (2), p. 182, 1925—same localities.

Maranhão: Barra do Corda, ♂ ad., ♀ ad., ♂ juv., Sept. 24, 29, Oct. 2, 1924; Fazenda Inhumá, Alto Parnahyba, two ♂ ♂ ad., July 24, 30, 1925.—“Iris brown; feet dark gray; bill plumbeous, tip blackish.”

Additional specimens.—Piahy: Corrientes, Rio Parnahyba, ♂ ad., July 26, 1903; Serra de Santa Philomena, ♀ ad., July 9, 1903. O. Reiser (Vienna Museum).

¹The locality “Pelotas, Rio Grande do Sul” mentioned by Sclater (Cat. B. Brit. Mus., 11, p. 280, 1886) is undoubtedly erroneous.

²*Saltator ruficapillus* Vieillot, 1817, replaces *Tanagra leucophaea* Lichtenstein, 1823. See Hellmayr, Verh. Orn. Ges. Bay., 14, p. 201, 1920.

Compared with a series from Bahia, these birds have the pileum generally rather more brownish and the anterior under parts slightly darker, while the dimensions are on average smaller. A number of Bahia skins, however, are quite indistinguishable in coloration, and two examples from Pernambuco very nearly attain the maximum measurements of *S. r. capistratus*. It thus appears to be impossible to subdivide this form, whose range would seem to extend from Bahia north to the interior of Piauí and Maranhão.

77. *Caryothraustes canadensis canadensis* (Linnaeus).

Loxia canadensis Linnaeus, Syst. Nat., 12th ed., 1, p. 304, 1766—based on Brisson, "Canada" (errore) = Cayenne.

Maranhão: Tury-assú, ♀ ad., Oct. 16, 1923.

Identical with specimens from Pará and British Guiana. The forested district of northern Maranhão apparently forms the eastern limit of the range of *C. c. canadensis*, represented by nearly allied races along the east coast of Brazil. In Pernambuco we find *C. canadensis frontalis* Hellm.,¹ with distinct black frontal band and bright yellow under parts, while still farther south, from Bahia to Rio de Janeiro, *C. canadensis brasiliensis* Cab.² takes its place.

[78. *Pitylus grossus grossus* (Linnaeus).

Loxia grossa Linnaeus, Syst. Nat., 12th ed., 1, p. 307, 1766—based on Brisson, "America"; we suggest Cayenne.

Pitylus grossus Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 61, 1926—Tury-assú, Maranhão.

Recorded by Madame Snethlage from Tury-assú. An Amazonian species extending east into Maranhão.]

79. *Saltator maximus maximus* (Müller).

Tanagra maxima P. L. S. Müller, Natursyst., Suppl., p. 159, 1776—based on Daubenton, Pl. Enl. 205, Cayenne.

Saltator magnus Reiser (1), p. 100, 1910—Miritiba, Maranhão.

"*Saltator magnus* (Gm.) = *maximus* (Müll.)" (sic) Reiser (2), p. 183, 1925—Miritiba.

Maranhão: Tury-assú, ♀ ad., Oct. 8, 1923; Rosario, ♀ ad., May 2, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 17, 1925.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Jan. 23, 1926.

¹Nov. Zool., 12, p. 277, 1905—São Lourenço, Pernambuco (three specimens examined).

²Mus. Hein., 1, p. 144, 1851—Bahia (twenty-one specimens examined).

These and other specimens from various parts of Brazil appear to me indistinguishable from a series of Guianan skins. In fact, on comparing more than one hundred examples of this widespread species, I am unable to perceive any geographic variation, and I do not see how any of the races separated by the late Charles Chubb¹ can be maintained.

[80. *Saltator coerulescens superciliaris* (Spix).]

Tanagra superciliaris Spix, Av. Bras., 2, p. 44, pl. 57, 1825—Joazeiro, Rio São Francisco, Bahia (type in Munich Museum examined).

Saltator superciliaris caerulescens (sic) Reiser (1), p. 83, 1910—Parnaguá and Lagôa Missão, Piauhý (spec. examined).

Saltator caerulescens superciliaris Reiser (2), p. 183, 1925—Parnaguá.

Though synonymized with *S. c. caerulescens* in my account of Spix's types,² this form, on careful examination of the material secured by Otmar Reiser at the type locality and in southern Piauhý, proves to be recognizable, standing somewhat between typical *coerulescens*, of Paraguay and Matto Grosso, and *S. c. mutus* Scl.,³ of Lower Amazonia. From the former it differs by reason of smaller size (wing of adult female 98-99, against 104-110; tail 86-92, against 97-107); less olivaceous upper parts; slate gray (instead of olive gray) sides of the head; pure white (not buffy) throat; pale gray (instead of olive grayish or buffy gray) breast, and much less extensive as well as much paler buffy abdominal area. It is even nearer to, and closely resembles, *S. c. mutus* underneath, but may be distinguished by paler grayish foreneck and breast, while the upper parts are markedly lighter gray and slightly tinged with olive on rump and tail coverts.

S. caerulescens superciliaris, so far, has been recorded only from the interior of Bahia and southern Piauhý.

Material examined.—Bahia: Joazeiro, Rio São Francisco, two ♂♂ (first annual); Fazenda Pedre Gulhu, Rio Preto, ♀ ad., April 15, 1903.—Piauhý: Parnaguá, ♀ ad., May 14, 1903; Lagôa Missão, near Parnaguá, ♀ juv., June 6, 1903. O. Reiser (Vienna Museum).]

81. *Saltator atricollis* Vieillot.

Saltator atricollis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 104, 1817—based on Azara, No. 82, Paraguay; Reiser, pp. 83, 183—Santo Antonio de Gilboez and Santa Philomena, Piauhý, and opposite Barra do Galiota, Maranhão.

¹Ann. Mag. Nat. Hist., (9), 8, pp. 445-446.

²Abhandl. z. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 677, 1906.

³P. Z. S. Lond., 24, p. 72, 1856—North Brazil, lower Amazon, island of Mexiana.

Maranhão: Codó, Cocos, two ♂♂, ♀ ad., June 18, 23, July 5, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 30, 1925.

Goyaz: Philadelphia, two ♂♂ ad., Nov. 28, Dec. 18, 1925.

Piauhy: Arára, ♂ imm., Jan. 20, 1925.

Ceará: Varzea Formosa, ♂ ad., Feb. 23, 1925.

Identical with specimens from Paraguay (near Asunción), Matto Grosso, and the interior of Bahia (Rio Preto).

This well-marked species is peculiar to the campo region of Brazil, ranging from Maranhão, Piauhy and the adjacent states of Ceará and Goyaz south to western Minas Geraes, northern São Paulo and Matto Grosso, and extending into Paraguay and eastern Bolivia (Chiquitos).

82. *Cyanocompsa cyanea cyanea* (Linnaeus).

Loxia cyanea Linnaeus,¹ Syst. Nat., 10th ed., 1, p. 174, 1758—based on Edwards, p. 125, pl. 125, "Angola," errore; Bahia substituted as type locality (auct. Berlepsch and Hartert, Nov. Zool., 9, p. 24, 1902).

Piauhy: Arára, ♂ ad., two ♂♂ juv., Jan. 20, 24, 30, 1925; Ibiapaba, ♀ ad., Dec. 30, 1924.

Ceará: Varzea Formosa, ♂ ad., two ♂♂ juv., Feb. 21, March 3, 1925.

In dusky blue mantle and under parts, and decidedly lighter (Chapman's or Eton blue) lower back, the adult males agree with a large series from Bahia (Santo Amaro, Lamarão, Macaco Secco, Rio do Peixe) and Pernambuco (São Lourenço).

Mr. Todd² unites *C. sterea* Oberholser,³ originally founded on a single immature male, with *C. c. cyanea*; but on comparing twenty-seven specimens from southern Brazil and Paraguay (Sapucay), we have no difficulty in distinguishing the male sex by the much duller more blackish coloration of both dorsal and ventral surface, with hardly any suggestion of the light blue uropygial area.

Material examined.—*C. cyanea cyanea*.—Bahia: Santo Amaro, 1 ♂; Lamarão, 3 ♂♂; Macaco Secco, near Andarahy, 1 ♂; Rio do Peixe,

¹The figure in Edwards's work, the sole basis of *Loxia cyanea*—since "Chinens. Lagerstr. No. 18," likewise quoted by Linnaeus and published in Amoeni. Acad., 4, p. 244, 1759, by Odhelius, one of his pupils, refers to the same plate—corresponds to the northern form of bright purplish coloration, ranging from Bahia to Piauhy. With respect to the alleged African origin of *Loxia cyanea* and *Loxia angolensis*, see Hellmayr, Nov. Zool., 15, p. 32, note, 1908.

²Auk, 40, p. 65, 1923.

³Proc. Biol. Soc. Wash., 14, p. 188, 1901—Sapucay, Paraguay.

near Queimadas, 1 ♂; trade skins, 17 ♂♂, 4 ♀♀.—Pernambuco: São Lourenço, 1 ♂ ad.—Ceará: Varzea Formosa, 3 ♂♂; unspecified, 1 ♂ ad.—Piauhy: Arára, 3 ♂♂; Ibiapaba, 1 ♀ ad.

C. cyanea sterea.—Goyaz: Rio Araguaya (near Leopoldina), ♂ ♀ ad.; Goyaz City, ♂ ♀ ad.—Minas Geraes: Rio das Velhas, near Lagôa Santa, 2 ♂♂.—Rio de Janeiro: Petropolis, 1 ♂ ad.; Rio, 1 ♂ ad., 1 ♀ ad.—São Paulo: Piquete, 1 ♂, 1 ♀; Victoria, 1 ♂ ad.; São Sebastião, 1 ♂, 1 ♀ ad.; Ipanemá, 4 ♂♂ ad., 4 ♀♀; Matto-dentro, 1 ♂ juv.—Rio Grande do Sul: Taquara do Mundo Novo, 1 ♂ ad., 2 ♀♀.—Paraguay: Sapucay, 1 ♂ ad., 1 ♀ ad.; Villa Rica, 1 ♂ ad.—Misiones: El Dorado, 1 ♂ imm., 2 ♀♀ ad.

C. c. cyanea is thus seen to be restricted to northeastern Brazil, ranging from Bahia north to Ceará and Piauhy, while *C. c. sterea* has a more southerly distribution which extends from southern Goyaz and Minas Geraes to Rio Grande do Sul, Paraguay, and Misiones. In Matto Grosso it gradually passes into the larger *C. c. argentina* Sharpe.

83. *Cyanocompsa cyanoides rothschildii* (Bartlett).

Guiraca rothschildii Bartlett, Ann. Mag. Nat. Hist., (6). 6, p. 168, 1890—Car. mang River, British Guiana (type in Tring Museum examined).

Maranhão: Tury-assú, ♀ ad., Nov. 14, 1923.

Identical with specimens from British Guiana and Conceição (Rio Branco).

The present record extends the eastern limit of its range from the Pará region to northern Maranhão.

[84. *Oryzoborus angolensis angolensis* (Linnaeus).

Loxia angolensis Linnaeus, Syst. Nat., 12th ed., 1, p. 303, 1766—based on Edwards, Glean. Nat. Hist., 3, p. 296, pl. 352, right fig., locality unknown.¹

Oryzoborus torridus Reiser, pp. 81, 179—Rio Taquarussú, Piauhy.

The Vienna Academy Expedition obtained a single adult male on July 10, 1903, on the Rio Taquarussú, near Santa Philomena, Piauhy.²

¹Although Linnaeus gives "Angola" as habitat, Edwards described the species from a live bird of unknown origin in the possession of "Philip Carteret Webb, M. P." Berlepsch and Hartert (Nov. Zool., 9, p. 25, 1902) suggested Surinam as type locality, but as explained elsewhere (Nov. Zool., 15, p. 32, 1908), Edwards's bird is more likely to have come from eastern Brazil—Rio or Bahia.

²Lately recorded by Madame Snethlage (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 61, 1926) from Tury-assú, Maranhão.

85. *Amaurospiza moesta* (Hartlaub).

Sporophila moesta Hartlaub, Journ. Orn., 1, p. 36, 1853—Brazil (type in Bremen Museum examined: = ♂ ad.).

Maranhão: Tranqueira, ♂ ad., Aug. 28, 1925.—Wing 67; tail 58; culmen 12; depth at base of lower mandible 4, width 9.—“Iris brown, feet plumbeous, bill black.”

Compared with four males from Therezopolis (Rio) and Misiones, this bird has a larger bill, and the upper back more conspicuously spotted with black.

A. moesta, whose characters and synonymy I have discussed in another connection,¹ was hitherto known only from southern Brazil (Rio to Paraná), the Argentine territory of Misiones,² and Paraguay.³ The present record thus extends its range considerably to the north, and it is quite possible that additional material may show the Maranhão bird to be racially different.

86. *Sporophila albogularis* (Spix).

Loxia albogularis Spix, Av. Bras., 2, p. 46, pl. 60, figs. 1, 2, 1825—Brazil; we suggest Bahia as type locality.

Piauhy: Ibiapaba, three ♂♂ ad., ♀ ad., Dec. 17, 26, 1924, Jan. 6, 1925; Arára, ♂ ad., ♀ ad., Feb. 5, 7, 1925.

Ceará: Varzea Formosa, ♀ ad., March 5, 1925.

Additional specimens.—Ceará: Quixada, two ♂♂, one ♀ ad., June 10, 24, 26, 1913. R. H. Becker.

The series agrees with specimens from Bahia. The female from Ibiapaba has a slight suggestion of the jugular band and white alar speculum, both characteristic of the male sex, and may be a very old, androgynous specimen.

S. albogularis is peculiar to the northeastern states of Brazil, having been recorded from Bahia, Pernambuco,⁴ Ceará, and Piauhy.

87. *Sporophila leucoptera cinereola* (Temminck).

Pyrhula cinereola Temminck,⁵ Nouv. Rec. Pl. Col., livr. 2, pl. 11, fig. 1, Sept., 1820—“Brésil”; we suggest Bahia.

¹Verh. Zool. Bot. Ges. Wien, 54, pp. 516-518, 1904.

²Dabbene, El Hornero, 1, p. 97, 1918—Iguazú.

³Bertoni, l. c., p. 258, 1919—Puerto Bertoni.

⁴Reiser, Denks. Math.-naturw. Kl. Ak. Wiss. Wien, 76, p. 81, 1910; p. 179, 1925.

⁵Temminck's name has priority over *Fringilla hypoleuca* Lichtenstein (Verz. Dubl. Berliner Mus., p. 26, 1823—Brazil). See Chubb, Bull. Brit. Orn. Cl., 41, p. 35, 1920.

Sporophila hypoleuca Reiser, pp. 81, 179—Santa Philomena, Piahy.

Maranhão: Grajahú, ♂ ad., Oct. 17, 1924.

Additional specimen.—Piahy: Santa Philomena, ♂ ad., July 17, 1903. O. Reiser (Vienna Museum).

These birds agree with a series from Bahia in size and coloration. Recent study of more satisfactory material tends to show that the distribution of the two races of *S. leucoptera*, as set forth in an earlier communication of mine,¹ requires certain modifications.

Adult males from Matto Grosso, including the type of *Sporophila hypoleuca clara* Cherrie,² while perhaps not quite so large, resemble Paraguayan examples (typical *leucoptera*³) in the dark (almost slaty) gray tone of the upper parts, relieved by a more or less distinct, though narrow, white uropygial band and nearly pure white ventral surface, with just a faint grayish shade along the inner sides of the chest. They must undoubtedly be ranked with *S. l. leucoptera* (Vieillot). Two males from the Rio Araguaya (Goyaz), and the Rio das Velhas, near Lagôa Santa (Minas Geraes), both in worn plumage, are similar in dimensions and white uropygial band, but approach the eastern form (*cinereola*) because of paler gray dorsal surface and more extensive grayish suffusion on the sides and flanks. Males from eastern Brazil (Rio, Bahia, Pernambuco, Piahy, Maranhão) average smaller, *lack the white uropygial band*, and are paler gray above, while the entire sides of the body below are strongly washed with gray, this color often forming a pectoral band across the chest. Females of the two races are hardly distinguishable.

S. l. leucoptera thus inhabits Paraguay, the Argentine Chaco, and the interior of Brazil, from western Minas Geraes and Goyaz to Matto Grosso.

S. l. cinereola replaces it in eastern Brazil, ranging from Rio de Janeiro north to Pernambuco, Piahy, and Maranhão.

A third form, *S. l. mexianae* Hellmayr⁴ is found on the island of Mexiana. It is quite as white underneath as *S. l. leucoptera*, but lacks the white rump band, while the upper parts are even lighter than in *S. l. cinereola*.

¹Verh. Zool. Bot. Ges. Wien, 54, pp. 536-537, 1904.

²Bull. Amer. Mus. N. H., 35, p. 188, 1916—São Lourenço River, below the mouth of the Rio Cuyabá, Matto Grosso, Brazil.

³*Coccothraustes leucoptera* Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 13, p. 521, 1817—based on Azara, No. 123, Paraguay.

⁴Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 119, 1912—Santa Maria, island of Mexiana.

MEASUREMENTS OF ADULT MALES

	Wing	Tail
<i>S. leucoptera leucoptera</i>		
Five leagues north of Villa Concepción, Paraguay (one)	63½	59
Lambaré, near Asunción, Paraguay (one)	65	58
São Lourenço River, Matto Grosso (one)	63	53
Cuyabá, Matto Grosso (two)	60, 61 (worn)	51, 54 (worn)
Cachoeira, Matto Grosso (one)	60 (worn)	51 (worn)
Agua Blanca de Corumbá, Matto Grosso (one)	61	57
Araguaya, Goyaz (one)	60	55
Rio das Velhas, Minas Geraes (one)	62 (worn)	52 (worn)
<i>S. leucoptera cinereola</i>		
Rio de Janeiro (one)	58	56
Santo Amaro, Bahia (one)	60	55
Bahia trade skins (eleven)	56, 57 (four), 58 (four), 59, 60	50, 50, 51, 51, 52, 53, 53, 54, 54, 54 55
Santa Philomena, Piauhv (one)	57	53
Grajahú, Maranhão (one)	60	55

[88. *Sporophila plumbea plumbea* (Wied).]

Fringilla plumbea Wied, Beitr. Naturg. Bras., 3, (1), p. 579, 1830—"Campo Geral" of Brazil, = boundary line of Bahia and Minas Geraes.

Sporophila plumbea Reiser, pp. 81, 179—Chapada da Varzea Grande (near Santo Antonio de Gilboez), Apertada Hora and Santa Philomena, Piauhv.

Reiser records two males and a female from various localities in southern Piauhv. Dr. Snethlage did not meet with this species which is widely distributed in the campo region of inner Brazil, ranging south to Paraná and west to Matto Grosso and into the plains of eastern Bolivia.]

89. *Sporophila nigricollis nigricollis* (Vieillot).

Pyrrhula nigricollis Vieillot,¹ Tabl. Enc. Méth., Orn., 3, livr. 93, p. 1027, July, 1823—Brazil.

Sporophila gutturalis Reiser, pp. 82, 179—Illa São Martin, Rio Parnahyba, Piauhv.

Goyaz: Philadelphia, ♂ ad., Dec. 16, 1925.

Ceará: Varzea Formosa, two ♂♂ ad., ♂ imm., Feb. 23, 24, March 4, 1925.

¹This name must replace *Fringilla gutturalis* Lichtenstein (Verz. Dubl. Berliner Mus., p. 26, 1823—São Paulo) by reason of anteriority. According to Sherborn and Woodward (Ann. Mag. Nat. Hist., (7), 17, p. 580, 1906), livr. 93 of the "Tableau encyclopédique méthodique" is mentioned in Bibl. France for July 26, 1823, while Lichtenstein's "Verzeichniss" was certainly published later, the preface being dated "September 1823." Sharpe (Cat. B. Brit. Mus., 12, p. 126, 1888) erroneously quoted *P. nigricollis* in the synonymy of *Sporophila caerulescens* (Vieillot).

Additional specimens.—Ceará: Quixada, ♂ ad., three ♀ ♀ ad., June 17, 20, 21, 22, 1913. R. H. Becker.

Agreeing with a large series from various parts of Brazil (Rio de Janeiro, Bahia, etc.).

90. *Sporophila bouvreuil* (Müller).

Loxia bouvreuil P. L. S. Müller, *Natursyst.*, Suppl., p. 154, 1776—based on "Bouvreuil, de l'Isle Bourbon" Daubenton, Pl. Enl. 204, fig. 1; locality erroneous, I have substituted Bahia, Brazil.

Maranhão: São Bento, two ♀ ♀ ad., Sept. 3, 4, 1923.

S. bouvreuil inhabits eastern Brazil, from the delta of the Amazon south to São Paulo. Birds from the southern part of this area are slightly paler, and this may indicate intergradation with *S. pileata* (Sclater), but the interrelations and ranges of the two forms, both of which have been found in São Paulo, though in different sections of the state, have yet to be worked out with the aid of far more material than is at present available. See Hellmayr, *Verh. Zool. Bot. Ges. Wien*, 54, pp. 519-520, 1904.

91. *Volatinia jacarina jacarina* (Linnaeus).

Tanagra jacarina Linnaeus, *Syst. Nat.*, 12th ed., 1, p. 314, 1766—based on Brisson (ex Marcgrave's "Jacarini"), northeastern Brazil.

Volatinia jacarini Reiser, pp. 82, 180—Santa Philomena, Therezina, opposite Ilha São Martin, and below União, Piahy.

Maranhão: Tury-assú, ♂ juv., Dec. 17, 1923; Grajahú, ♂ juv., Oct. 25, 1924; Tranqueira, ♂ juv., Aug. 18, 1925.

In males from eastern Brazil, of which Field Museum has a good many from Pará and various parts of Bahia, the axillaries and under wing coverts are, as a rule, white, though one from Rio do Peixe, near Queimadas (Bahia) has them almost uniform black.

92. *Spinus magellanicus alleni* Ridgway.

Spinus alleni Ridgway, *Auk*, 16, p. 37, 1899—Chapada, Matto Grosso, Brazil.

Chrysomitris icterica alleni Reiser (1), p. 81, 1910—part, Nos. 704, 751, Parnaguá, Piahy; idem (2), p. 178, 1925—Parnaguá.

Goyaz: Certeza, ♀ ad., Sept. 26, 1925.—Wing 63; tail 38; bill 9.

A perfectly typical example of this race which replaces *S. m. ictericus* in the central and western parts of Brazil (states of Bahia, Goyaz, and Matto Grosso) and eastern Bolivia. It appears to reach the

northern limit of its range in southern Piauhý, where Reiser secured two specimens in the vicinity of Parnaguá, and the adjacent section of Goyaz, the present example having been taken near the sources of the Rio Perdido. Mr. Todd, in his recently published monograph,¹ extends its distribution south to the Chaco and Paraguay. While specimens from west of the Paraguay River (whence we have no material) may actually be referable to *S. m. alleni*, two adult males from Bernalcué (near Asunción) are certainly *not* of this form and appear to me indistinguishable from the south-Brazilian *ictericus*. I expect the ranges of these two forms will eventually be found to be separated by the Paraguay River.

93. *Spinus yarrellii* (Audubon).

Carduelis yarrellii Audubon, Syn. Birds N. America, p. 117, 1839—"Upper California," errore; = Bahia, Brazil.

Ceará: Juá, near Iguatú, ♀ ad., Aug. 13, 1913. R. H. Becker.

This Siskin is an inhabitant of the arid districts of eastern Brazil in the states of Bahia and Ceará, but reappears in the vicinity of Lake Valencia, Carabobo, in northern Venezuela, thus offering a case of discontinuous distribution parallel to the range of *Basileuterus flaveolus*.

94. *Sicalis flaveola flava* (Müller).

Fringilla flava P. L. S. Müller, Natursyst., Suppl., p. 164, 1776—based on Daubenton, Pl. Enl. 321, fig. 1, Brazil: we suggest Rio de Janeiro.²

Sycalis flaveola (not *Fringilla flaveola* Linnaeus) Reiser, pp. 81, 178—Parnaguá.

Maranhão: Codó, Cocos, two ♀ ♀ ad., two ♂ ♂ juv., June 12, 19, 25, July 10, 1924.

Piauhý: Ibiapaba, ♀ ad., ♂ juv., Jan. 3, 8, 1925; Arára, ♂ juv., Feb. 11, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, three ♂ ♂ ad., ♀ ad., ♂ juv., ♀ juv., Aug. 11, 12, 13, 31; Quixada, two ♂ ♂ ad., three ♀ ♀ ad., two juv., June 10, 16, 20, 26, 27, July 1; Serra de

¹Ann. Carnegie Mus., 17, pp. 52-54, 1926.

²I think there can be little doubt that Daubenton's plate was based on a specimen of the Brazilian Saffron Finch. Buffon, himself, identified his "Guirnegat" with Marcgrave's "Guiranheemgatu," and gives Brazil as its habitat. His bird is much more likely to have come from one of the ports on the east coast (Rio or Bahia) than from the area occupied by *S. f. pelzelni* in the extreme south of Brazil, then practically unexplored. If, however, *Fringilla flava* Müller be rejected, *Emberiza braziliensis* Gmelin (Syst. Nat., 1, (2), p. 872, 1789), almost exclusively based on Marcgrave's "Guiranheemgatu" (from northeastern Brazil), hence of unquestionable pertinence, would be the next available name.

Baturité, two ♀ ♀ ad., two ♀ ♀ juv., July 17, 18, 19, 20, 1913.
R. H. Becker.

Besides, I have before me several specimens from Bahia (Santo Amaro; São Marcello, Rio Preto), Espírito Santo (Victoria), Rio de Janeiro (Therezopolis, Cantagallo), and São Paulo (Cachoeira, São Sebastião).

This series differs from typical *S. f. flaveola*, as represented by twenty-five skins from Surinam and Venezuela, in more heavily streaked upper parts, slightly striated flanks, and generally paler as well as less extensive orange on the anterior crown in the adults, while the immature ("*aureipectus*") plumage may be distinguished by the narrower, paler yellow prepectoral band which, furthermore, is frequently streaked with dusky. Specimens from Rio de Janeiro and São Paulo are obviously inseparable from those of northern Brazil.¹

S. flaveola flava ranges throughout eastern Brazil, from the interior of Maranhão, Piauh, and Ceará south to São Paulo. Farther south, in Santa Catharina and Rio Grande do Sul as well as in Matto Grosso, it is replaced by *S. flaveola pelzelni* Sclater, which, in the male plumage, is not unlike the female of *S. f. flava*, but the subspecies may immediately be recognized by the very differently colored female.

[95. *Sicalis columbiana leopoldinae* Hellmayr.

Sicalis columbiana leopoldinae Hellmayr, Bull. Brit. Orn. Cl., 16, p. 85, 1906—Leopoldina, Rio Araguaia, Goyaz, Brazil.

Sycalis arvensis minor (not of Cabanis) Reiser (1), p. 81, 1910—part, No. 296, Joazeiro; No. 1181, Tronco Falls, Rio Parnahyba, Piauh.²

Sycalis arvensis (not of Kittlitz) Reiser (2), p. 178, 1925—part, Tronco Falls, Piauh.

Piauh: Tronco Falls, below Nova York, Rio Parnahyba, ♀ ad., Aug. 4, 1903. O. Reiser (Vienna Museum).—Wing 56; tail 40; bill 9.

This example, an adult female in perfectly fresh plumage, appears to be inseparable from two topotypical females. A female, in worn breeding garb, secured by O. Reiser on March 18, 1903, about nine kilometers above Joazeiro, on the Rio São Francisco, Bahia, is like-

¹*Sicalis flaveola holti* Miller (Auk, 42, p. 254, 1925—Monte Serrat, Serra do Itatiaia, São Paulo) is apparently synonymous with *S. f. flava*.

²The adult male from Joazeiro (No. 295), mentioned by Reiser, proves to be totally different. It belongs to the *Sicalis luteola* group and obviously represents an undescribed form.

wise referable to this form, and Field Museum possesses an immature bird from São Marcello, Rio Preto, Bahia, obtained by R. H. Becker.

Adult males are required to establish beyond doubt the subspecific identity of these birds.

Like its northern allies, *S. c. leopoldinae* frequents grassy country along river banks. Its range is restricted to eastern Brazil (states of Goyaz, Bahia and Piauh).]

[96. *Pseudochloris citrina citrina* (Pelzeln).

Sycalis citrina Pelzeln, Orn. Bras., 3, pp. 232, 333, 1870—Jaguaraiba [= Rio Jaguariaiba], Paraná (type in Vienna Museum examined).

Pseudochloris citrina Reiser, pp. 82, 181—Santo Antonio de Gilboez, Piauh.

Piauh: Santo Antonio de Gilboez, ♂ ad., June 30, 1903. O. Reiser (Vienna Museum).

Except for its somewhat brighter rump, the specimen was found to agree with the type.

This rare species has been taken at a number of localities in eastern Brazil (Rio Jaguariaiba and Murungaba, Paraná; Itararé, São Paulo; Marianna, Minas Geraes; Santo Antonio de Gilboez, Piauh), but appears to be nowhere common.

In the mountains of northern South America (Roraima; Cumbre de Valencia, Venezuela; Santa Marta and Bogotá region, Colombia) it is represented by the barely separable (slightly smaller) *P. citrina browni* (Bangs).]

97. *Brachyspiza capensis matutina* (Lichtenstein).

Fringilla matutina Lichtenstein, Verz. Dubl. Berliner Mus., p. 25, 1823—Brazil (lectotype: No. 6064, Bahia, in Berlin Museum examined).

Zonotrichia pileata (not *Emberiza pileata* Boddaert) Reiser (1), p. 82, 1910—Santo Antonio de Gilboez, Piauh.

Brachyspiza (*Zonotrichia*) *pileata* Reiser (2), p. 180, 1925—Piauh.

Maranhão: Grajahú, two ♀ ♀ ad., Oct. 22, 1924; Codó, Cocos, ♂ ad., ♀ ad., June 20, 23, 1924.

Piauh: Ibiapaba, ♂ ad., Dec. 14, 1924; Arára, ♂ ad., Jan. 27, 1925.

Agreeing with a series from Bahia and southern Brazil. Compared with two skins from Cayenne¹ and others from Venezuela, the Brazil-

¹Type locality of *Fringilla capensis* P. L. S. Müller (Natursyst., Suppl., p. 165, 1776—based on "Bruant, du Cap de Bonne Espérance," Daubenton, Pl. Enl. 386, fig. 2); see Buffon, Hist. Nat. Ois., 4, p. 369, 1778.

ian birds are somewhat larger, with stronger bills, and have the nuchal collar decidedly deeper rufous. While examination of a larger series from the type locality is desirable, I think it advisable to separate this southern form, at least provisionally, under Lichtenstein's term. In the south *B. c. matutina*, judging from the material examined in this connection, ranges as far as Rio Grande do Sul, Matto Grosso (Chapada, Urucúm), and Paraguay. Specimens from Bernalcué (near Asunción) in the latter country, are in every respect similar to the Brazilian ones, indicating that *B. c. mellea* Wetmore,¹ in all probability, is restricted to the Chaco region west of the Paraguay.

98. *Porphyrospiza caerulescens* (Wied).

Tanagra caerulescens Wied, Beitr. Naturg. Bras., 3, (1), p. 541, 1830—Campos Geraes of Brazil.

Porphyrospiza caerulescens Reiser, pp. 82, 180—Floresta, near Burity and Santo Antonio de Gilboez, Piauhý.

Maranhão: Tranqueira, two ♂♂ ad., two ♂♂ imm., ♀ ad., Aug. 18, 19, 24, 1925.

Additional specimens.—Piauhý: Floresta, near Parnaguá, ♂ ad., June 17, 1903; Santo Antonio de Gilboez, ♀ ad., July 1, 1903. O. Reiser (Vienna Museum).

Identical with specimens from Matto Grosso (Chapada) and Goyaz. This relatively scarce species is peculiar to the campo region of central Brazil. The present is the first record from Maranhão, though it has been taken by the Vienna Academy Expedition in the neighboring state of Piauhý. It appears to be more numerous in Goyaz, where it was met with by Auguste de Saint-Hilaire, Natterer, and G. A. Baer, and in Matto Grosso, whence H. H. Smith sent a large series to the American Museum. Furthermore, Natterer obtained specimens at Nas Furnas, in western Minas Geraes, while Wied's original example was secured somewhere along the boundary line of Minas Geraes and Bahia.

99. *Myospiza humeralis humeralis* (Bosc).

Tanagra humeralis Bosc, Journ. d'Hist. Nat., 2, No 17, p. 179, pl. 34, fig. 4, 1792—Cayenne.

Ammodromus (sic) *manimbe* Reiser (1), p. 82, 1910—Apertada Hora, Rio Parnahyba, and littoral of Piauhý.

¹Proc. Biol. Soc. Wash., 35, p. 39, 1922—eighty kilom. west of Puerto Pinasco, Paraguayan Chaco.

Myiospiza (Ammodromus) manimbe Reiser (2), p. 181, 1925—Rio Parnahyba.

Maranhão: São Bento, two ♀ ♀ ad., Sept. 3, 13, 1923; Codó, Cocos, two ♂ ♂ ad., ♀ juv., June 11, 14, 1924; Tranqueira, ♀ ad., Aug. 18, 1925.

Additional specimen.—Maranhão: Miritiba, ♀ ad., April 21, 1907. F. Schwanda (Munich Museum).

Careful comparison of these and thirty additional examples from various parts of Brazil (Bahia, Minas Geraes, São Paulo, Matto Grosso) with an excellent series of typical *humeralis* from Cayenne, British Guiana, and the upper Rio Branco (Serra da Lua) fails to reveal any character by which a southern form (*manimbe*)¹ could be discriminated. Contrary to the assertion of Messrs. Bangs and Penard,² there is no difference in the coloration of the under parts between Guianan and Brazilian birds. Individual and seasonal variation in this species is so great that particular care must be taken to compare only specimens in corresponding plumage.

I am even somewhat uncertain whether the form of Argentina and Uruguay which Wetmore, in his recent review,³ distinguishes as *M. humeralis dorsalis*⁴ can be maintained. Birds from near Asunción, Paraguay, are certainly not separable from *humeralis* of Brazil, but those from Uruguay, Buenos Aires, and Corrientes, owing to the reduction of the brownish lateral margins to the blackish central streaks of the dorsal feathers, generally appear rather grayer, although they can be matched by certain Brazilian examples. An adult male from Puerto Pinasco, Paraguayan Chaco (American Museum of Natural History, No. 149755) and the type of *Myospiza manimbe nigrostriata* Cherrie⁵ are also typical representatives of this stage. An adult female (in exceedingly fresh plumage) from the island of Marajó (delta of the Amazon), however, is even grayer, lacking every trace of brownish suffusion on the upper parts.

A far larger series than is at present available in any museum will be required in order to define any possible geographic races.

¹*Fringilla manimbe* Lichtenstein, Verz. Dubl. Berliner Mus., p. 25, 1823—Bahia.

²Bull. Mus. Comp. Zool., 62, p. 92, 1918.

³Bull. U. S. Nat. Mus., 133, pp. 427-431, 1926.

⁴If separable, its earliest name is *Ammodramus xanthornus* Gould (in Darwin, Zool. Beagle, 3, Part 9, pl. 30, July 1839), based on a specimen from Maldonado, which I have examined in the British Museum.

⁵Bull. Amer. Mus. Nat. Hist., 35, p. 189, 1916—Rio Negro, a small tributary of the Rio Pilcomayo, Paraguayan Chaco.

100. *Emberizoides herbicola* (Vieillot) subsp.

Sylvia herbicola Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 11, p. 192, 1817—based on Azara, No 230, Paraguay.

Maranhão: São Bento, ♀ ad. (in very worn breeding plumage), two ♀ ♀ imm., Sept 8, 13, 1923.

These birds belong to the same race that was discussed in my account of Lorenz Müller's collection from the island of Mexiana.¹ The adult female combines the plain (unstriped) flanks of *herbicola* with the small size and strongly marked uropygium of *sphenurus*. However, one of the immature birds (which has nearly finished the post-juvenile molt) shows very conspicuous blackish streaks on the flanks like specimens from Guiana and Venezuela.

Until a satisfactory series from northern Brazil comes to hand, the status of this intermediate race cannot be determined. The typical *E. h. herbicola* ranges in eastern Brazil as far north as Bahia and Pernambuco.

101. *Coryphospingus pileatus pileatus* (Wied).

Fringilla pileata Wied, Reise Bras., 2, p. 160, 1821—Barra da Vareda, Rio Pardo, southern Bahia.

Coryphospingus pileatus Reiser (2), p. 181, 1925—Remanso Surupi and Melancia, Rio Parnahyba, Piahy.

Maranhão: Barra do Corda, three ♂ ♂ ad., two ♀ ♀ ad., Aug. 16, 18, 19, 22, 1924; Grajahú, ♂ ♀ ad., Oct. 18, 21, 1924; São Francisco, ♂ ad., May 30, 1925.

Piahy: Arára, ♂ ad., Jan. 31, 1925; Ibiapaba, ♂ ad., three ♀ ♀ ad., Dec. 17, 20, 23, 1924, Jan. 16, 1925.

Ceará: Varzea Formosa, ♀ ad., March 4, 1925.

Additional specimens.—Ceará: Serra de Baturité, ♂ ad.; Quixada, four ♂ ♂, two ♀ ♀; Juá, near Iguatú, twelve ♂ ♂, seven ♀ ♀, July and August, 1913. R. H. Becker.

Agreeing with a series from Bahia (Santo Amaro; Macaco Secco, near Andarahy).

This species, in all probability a geographical race of *C. cucullatus* (P. L. S. Müll.), is peculiar to eastern Brazil. Its range extends from eastern Minas Geraes, (Curvello, Lagôa Santa), northern Goyaz (Leopoldina), and Espirito Santo north through Bahia to Ceará, Piahy, and Maranhão. Farther west, in western Minas Geraes

¹Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 104, 1912.

(Uberaba; Rio Jordão, near Araguary; Agua Suja, near Bagagem), southern Goyaz, and Matto Grosso as well as in the north, from Pará to British Guiana, it is replaced by the red *C. cucullatus*. The gray type, however, reappears in a very slightly modified form, *C. pileatus brevicauda* Cory,¹ distinguishable by shorter tail and more whitish lores, in northern Venezuela and Colombia.

102. *Charitospiza eucosma* Oberholser.

Fringilla ornata (not of Vieillot 1817) Wied, Reise Bras., 2, p. 191, 1821—Fazenda Valo, near the frontier of Minas Geraes, Bahia.

Charitospiza eucosma Oberholser, Smiths. Misc. Coll., 48, p. 67, 1905—new name for *Fringilla ornata* Wied, preoccupied.

Charitospiza ornata Reiser, pp. 83, 182—Chapada da Varzea Grande and Santo Antonio de Gilboez, Piauhv.

Maranhão: Codó, Cocos, two ♂♂ ad., ♀ ad., June 19, July 10, 1924; Fazenda Inhuma, Alto Parnahyba, two ♀♀ ad., July, 20, 22, 1925; Tranqueira, two ♂♂ ad., Sept. 2, 4, 1925.

This is another characteristic species of the campo region, ranging throughout the Brazilian highlands from Maranhão, Piauhv, and Bahia south to western Minas Geraes (Nas Furnas, Sant' Anna dos Alegres, Andrequecé, Curvello, Lagôa Santa, Sete Lagôa), northern São Paulo (Nas Lages), and Matto Grosso.

103. *Paroaria dominicana* (Linnaeus).

Loxia dominicana Linnaeus, Syst. Nat., 10th ed., 1, p. 172, 1758—Brazil.²

Paroaria larvata Reiser (2), p. 182, 1925—Rio Parnahyba, from Bôa Esperança to below Colonia Floriano, near Aráras, Piauhv.

Maranhão: São Francisco, ♂ ad., ♀ juv., July 4, 5, 1925.

Piauhv: Ibiapaba, ♀ ad., two ♀♀ juv., Dec. 12, 22, 1924, Jan. 2, 1925; Deserto, ♂ ad., Apr. 8, 1925; Arára, ♂ ad., Jan. 27, 1925.

Not different from specimens taken by R. H. Becker on the Rio do Peixe, near Queimadas, Bahia.

The range of the Gray Cardinal is restricted to eastern Brazil from Minas Geraes (Rio São Francisco) and Bahia north to Piauhv and Maranhão.

104. *Paroaria gularis gularis* (Linnaeus).

Tanagra gularis Linnaeus, Syst. Nat., 12th ed., 1, p. 316, 1766—based on Brisson, "America"; we suggest Cayenne.

¹Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 345, 1916—Margarita Island.

²See Lönnberg, Bihang Svensk. Akad. Handl., 22, Afd. 4, No. 1, p. 29, 1896 (note on type in Upsala Museum).

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Feb. 4, 1926; Philadelphia, ♀ ad., Dec. 4, 1925.

Identical with specimens from French and British Guiana. It is very interesting to find this Guianan species on the lower Tocantins, and not *P. baeri* Hellmayr,¹ with which we meet farther south, on the banks of the Araguaya, near Leopoldina. An adult female, obtained by E. G. Holt at Conceição do Araguaya (about 8° s. lat.) on November 11, 1926, and preserved in the collection of the Carnegie Museum, is likewise referable to *P. g. gularis*. The range of *P. baeri* would thus seem to be restricted to the headwaters of the Araguaya.

105. *Xolmis cinerea* (Vieillot).

Tyrannus cinereus Vieillot, Analyse nouv. Ornith. élém., p. 68, 1816—South America; we suggest hinterland of Rio de Janeiro.

Taenioptera nengeta (not *Lanius nengeta* Linnaeus) Reiser, pp. 70, 154—Chapada da Varzea Grande, Santo Antonio de Gilboez, and Amaração, Piahy.

Maranhão: Codó, Cocos, two ♀ ♀ ad., June 16, 17, 1924.

Additional specimens.—Piahy: Chapada da Varzea Grande, ♀ ad., June 27; Santo Antonio de Gilboez, two ♂ ♂ ad., June 30, July 4; Amaração, ♀ ad., Sept. 14, 1903. O. Reiser (Vienna Museum).

Specimens from various parts of Brazil, Paraguay, and Argentina agree well together. *T. cinerea obscura* Cory² was separated by mistake, the supposed racial characters being due to the fresh plumage of the original series, while the few specimens used for comparison happened to be in worn condition.

A characteristic species of the open campos, ranging north to Marajó and the Xingú region (Rio Iriri).

106. *Xolmis velata* (Lichtenstein).

Muscicapa velata Lichtenstein, Verz. Dubl. Berliner Mus., p. 54, 1823—São Paulo.

Taenioptera velata Reiser, pp. 71, 154—Chapada da Varzea Grande and Santo Antonio, Piahy.

Maranhão: Codó, Cocos, ♂ ad., ♀ ad., June 10, 1924.

¹Bull. Brit. Orn. Cl., 19, p. 43, 1907; Nov. Zool., 15, p. 36, 1908—Leopoldina, Rio Araguaya, Goyaz.

²Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 341, 1916—São Marcello, Rio Preto, Bahia.

Snethlage's specimens agree with others from Minas Geraes, Matto Grosso, and São Paulo.

This is another endemic species of the Brazilian campo region, the range of which stretches north to the Amazon and west into Bolivia.

[107. *Xolmis irupero nivea* (Spix).

Muscicapa nivea Spix, Av. Bras., 2, p. 20, pl. 29, fig. 1, 1825—near Joazeiro, Rio São Francisco, Bahia (type in Munich Museum examined).

Ceará: Unspecified, ♀ imm., Berlepsch Collection (Frankfort Museum).

Agreeing with females from the type locality. The distinctness of this race which is only known from Bahia and Ceará¹ requires corroboration by a satisfactory series.]

108. *Knipolegus lophotes* (Boie).

Musc[icapa] lophotes (Temminck MS.) Boie,² Isis, 21, p. 317, 1828—new name for *Muscicapa galeata* Spix (not Lichtenstein 1823), Av. Bras., 2, pl. 27, 1825, São Paulo.

Goyaz: Certeza (headwaters of the Rio Perdido), ♂ ad., Sept. 26, 1925.—Wing 118; tail 101; bill 17.

This example is identical with others from southern Brazil. The present record extends the known range of the Crested Black Tyrant from Matto Grosso and Minas Geraes north to the confines of Piahy.

109. *Fluvicola pica albiventer* (Spix).

Muscicapa albiventer Spix, Av. Bras., 2, p. 21, pl. 30, fig. 1, 1825—part, description of male, Brazil (type in Munich Museum examined).

Fluvicola albiventris Reiser, pp. 71, 155—Therezina and Amaração, Piahy.

Piahy: Arára, ♂ ad., Jan. 20, 1925.

Additional specimens.—Ceará: Quixada, two ♂♂ imm., June 10, 24, 1913. R. H. Becker.

Widely distributed in Brazil south of the Amazon, Paraguay, northern Argentina, and eastern Bolivia.

110. *Fluvicola climazura climazura* (Vieillot).

Oenanthe climazura Vieillot (and Oudart), Galerie Ois., 1, (2), p. 255, pl. 157, 1824—Brazil.

¹See Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 17, 1927.

²Replaces *Knipolegus lophotes* Hellmayr (Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 67, 1927).

Fluvicola climacura Reiser, pp. 71, 155—Illa Grande, Lake Parnaguá, and coast of Piahy.

Maranhão: Barra do Corda, two ♂♂ ad., Aug. 18, 22; Codó, Cocos, ♂ ad., July 11, 1924.

Additional specimens.—Ceará: Serra de Baturité, ♀ ad., July 12; Quixada, ♂ ad., ♀ ad., June 17, 26; Juá, near Iguatú, five ♂♂ ad., July 31, Aug. 3, 12, 28, Sept. 4, 1913. R. H. Becker.

The Courier Water-Tyrant is peculiar to northeastern Brazil, ranging from Maranhão east to Pernambuco and south to Bahia.

A closely related race, *F. c. atripennis*, is found on the coast of Ecuador.

111. *Arundinicola leucocephala* (Linnaeus).

Pipra leucocephala Linnaeus, Mus. Ad. Frid., 2, Prodr., p. 33, 1764—Surinam (see idem, Syst. Nat., 12th ed., 1, p. 340, 1766).

Arundinicola leucocephala Reiser, pp. 71, 156—coast of Piahy.

Maranhão: Tury-assú, ♂ ad., Oct. 23, 1923.

Ceará: Varzea Formosa, ♂ juv., March 2, 1925.

Additional specimen.—Maranhão: Bôa Vista, ♂ ad., Dec. 15, 1906. F. Schwanda.

The White-headed Marsh-Tyrant has an extensive distribution in South America, from Colombia, Guiana, and Trinidad down to Paraguay and northeastern Argentina.

[112. *Pyrocephalus rubinus rubinus* (Boddaert).

Muscicapa rubinus Boddaert, Tabl. Pl. Enl., p. 42, 1783—based on Daubenton, Pl. Enl. 675, fig. 2, and Buffon's "Le Rubin, de la rivière des Amazones."

Pyrocephalus rubineus Reiser, pp. 75, 164—Parnaguá and Bandeira, Piahy.

Piahy: Parnaguá, ♂ ad., ♂ imm., May 13, 15, 1903. O. Reiser (Vienna Museum).

The Scarlet Flycatcher is widely diffused in Brazil south of the Amazon and in the neighboring countries.]

[113. *Satrapa icterophrys* (Vieillot).

Muscicapa icterophrys Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 21, p. 458, 1818—based on Azara, No. 183, Paraguay.

Sisopygis icterophrys Reiser, pp. 71, 156—lower Rio Parnahyba, from Therezina to São Martin, Piahy; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 62, 1926—São Bento, Maranhão.

Specimens of the Yellow-browed Tyrant were noted by Reiser on the banks of the lower Parnahyba, and at São Bento Madame Snethlage also met with this species which ranges over the whole of eastern Brazil, from Piauhý south to Rio Grande do Sul, and is also found in northern Argentina, eastern Bolivia, etc.]

114. *Machetornis rixosa rixosa* (Vieillot).

Tyrannus rixosus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 35, p. 85, 1819—based on Azara, No. 197, Paraguay.

Machetornis rixosa Reiser, pp. 71, 157—Santa Philomena and junction of the Barroca do Maranhão, Rio Parnahyba, Piauhý.

Maranhão: Codó, Cocos, ♀ ad., June 18, 1924; São Francisco, Rio Parnahyba (opposite Amarante), ♂ ad., ♀ ad., May 30, June 3, 1925.

Piauhý: Ibiapaba, ♂ ad., Jan. 7, 1925; Arára, ♂ ad., Jan. 26, 1925.

The throat on average is rather more yellowish than in birds from more southern localities, though some of the latter are not distinguishable on this score.

A species of wide distribution in the Brazilian table-land and adjacent countries.

115. *Muscivora tyrannus* (Linnaeus).

Muscicapa tyrannus Linnaeus, Syst. Nat., 12th ed., 1, p. 325, 1766—based on *Tyrannus cauda bifurca* Brisson, Orn., 2, p. 395, pl. 39, fig. 3, "Canada" (errore) and Cayenne.

Maranhão: São Bento, ♀ ad., Sept. 3, 1923.

Generally distributed in Central and South America.

116. *Tyrannus melancholicus despotes* (Lichtenstein).

Muscicapa despotes Lichtenstein, Verz. Dubl. Berliner Mus., p. 55, 1823—Bahia.

Tyrannus melancholicus (not of Vieillot) Reiser, pp. 76, 165—Parnaguá, Piauhý.

Maranhão: Mangunça Island, ♀ ad., Feb. 22, 1924; São Luiz, ♂ ad., July 31, 1923; São Bento, ♂ juv., Sept. 7, 1923.

Piauhý: Arára, ♂ ad., Jan. 26, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., ♀ ad., Sept. 4; Quixada, ♂ ad., ♂ imm., June 19, 21, 1913. R. H. Becker.

The series agrees with topotypes from Bahia.

Lichtenstein's Kingbird replaces *T. m. melancholicus* from Bahia northwards, and ranges over a large section of northern South America, including Trinidad, Tobago, and some of the Lesser Antilles.

117. *Empidonomus varius rufinus* (Spix).

Muscicapa rufina Spix, Av. Bras., 2, p. 22, pl. 31, figs. 1, 2, 1825—"in provincia fl. Amazonum" (type in Munich Museum examined).

Maranhão: São Luiz, ♂ juv., ♀ ad., July 28, 31, 1923; Grajahú, ♂ ad., Oct. 18, 1924.

Piauí: Arára, ♂ ad., Jan. 28, 1925; Deserto, ♀ juv., Apr. 2, 1925.

Additional specimens.—Ceará: Serra de Baturité, two ♂♂ ad., July 15, 21, 1913. R. H. Becker.—Maranhão: São Luiz, ♂ ad., ♀ juv., June, 1905. F. Schwanda (Sophia Museum).

This series agrees well with specimens from the Amazon Valley (Itacoatiará, Manáos), and birds from Bahia are likewise similar. Compared with ten skins of typical *varius* from Paraguay, southern Brazil (Rio de Janeiro to Santa Catharina), and eastern Bolivia (Buenavista, dept. Santa Cruz) they average somewhat smaller in wing measurements, are not quite so dark above, and the streaking underneath is much less distinct and mainly restricted to the chest.

About the distribution of the races of the Varied Flycatcher, consult the recently published Catalogue of the Tyrannidae in Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, pp. 113-115, 1927.

118. *Empidonomus aurantio-atro-cristatus pallidiventris* nom. nov.¹

Empidonomus aurantio-atro-cristatus minor Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 116, 1927—São Luiz, Maranhão.

Empidonomus aurantio-atro-cristatus (not of Lafresnaye and d'Orbigny) Reiser, pp. 76, 165—Tronco Falls, Rio Parnahyba, Piauí.

Maranhão: São Luiz, ♂ ad., Aug. 15, 1923; Codó, Cocos, two ♂♂ ad., two ♀♀ ad., June 16, 21, 26, 1924; São Francisco (opposite Amarante), Rio Parnahyba, ♂ ad., July 1, 1925.

Additional specimens.—Piauí: Tronco Falls, Rio Parnahyba, ♂ ad., ♀ ad., Aug. 4, 1903. O. Reiser (Vienna Museum).

¹*Empidonomus aurantio-atro-cristatus minor* Hellmayr, April 1927, proves to be invalidated by *Empidonomus minor* Sztolcman (Ann. Zool. Mus. Pol. Hist. Nat., 5, p. 227, Dec. 31, 1926—Cayenne).

This is a northern form of the well-known *E. a. aurantio-atrocristatus* (Lafr. and d'Orb.), differing by reason of smaller size and much paler coloration, particularly of the lower parts. Its range appears to be restricted to northern Brazil. Besides the specimens listed above, I have examined an adult male obtained at the Fazenda de Thomas da Saga, near Porto Imperial, lower Tocantins, northern Goyaz, on September 13, 1844, by Count Castelnau, in the collection of the Paris Museum. Birds from the city of Goyaz, recently examined in the Vienna Museum, while identical in coloration, approach the typical form in size.

119. *Legatus leucophaeus leucophaeus* (Vieillot).

Platyrhynchus leucophaeus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 27, p. 11, 1818—"l'Amérique méridionale" = Cayenne (type in Paris Museum examined).

Maranhão: Carolina, lower Tocantins, ♂ ad., Nov. 12, 1925.

Generally distributed in Central and South America.

[120. *Myiodynastes maculatus maculatus* (Müller).

Muscicapa maculata P. L. S. Müller, Natursyst., Suppl., p. 169, 1776—based on Daubenton, Pl. Enl. 453, fig. 2, Cayenne.

Myiodynastes maculatus Snethlage, Bol. Mus. Goeldi, 8, p. 383, 1914—Maranhão.

The Munich Museum possesses an adult male, taken by the late F. Schwanda at Miritiba, Maranhão, on November 17, 1907, which I found to agree with specimens from Guiana and Trinidad.

The center of the distribution of the Streaked Flycatcher is in Guiana, but various examples have been secured at places on the lower Amazon, the most southerly records being Miritiba, Maranhão, and Borba, Rio Madeira.]

121. *Myiodynastes solitarius* (Vieillot).

Tyrannus solitarius Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 35, p. 88, 1819—based on Azara, No. 196, Paraguay.

Myiodynastes solitarius Reiser, pp. 75, 162—Olho d'Água, Serra near Parna-guá and Lake Parna-guá, Piahy.

Maranhão: São Bento, ♂ ad., Sept. 5, 1923; Barra do Corda, two ♂ ♂ ad., ♀ ad., Sept. 1, 24, 1924.

Piahy: Ibiapaba, ♂ ad., two ♀ ♀ ad., Dec. 20, 27, 1924.

Additional specimens.—Ceará: Serra de Baturité, ♂ ad., July 21; Quixada, two ♂♂ ad., July 1, 1913. R. H. Becker.—Maranhão: Miritiba, ♂ ad., June 6, 1907 (Munich Museum), ♂ juv., ♀ juv., June 16, July 2, 1905 (Sophia Museum). F. Schwanda.

Extensively distributed in Brazil, Peru, Paraguay, and Argentina, ranging north into British Guiana.

122. *Megarynychus pitangua pitangua* (Linnaeus).

Lanius pitangva Linnaeus, Syst. Nat., 12th ed., 1, p. 136, 1766—based on "Pitangva Guaçu" Marcgrave, Hist. Nat. Bras., p. 216, northeastern Brazil.

Megarhynchus pitangua Reiser, pp. 75, 163—Lake Parnaguá, Piauí.

Maranhão: Tury-assú, ♀ juv., Nov. 26, 1923; Rosario, ♂ ad., May 5, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 23, 1925.

Goyaz: Philadelphia, lower Tocantins, ♀ ad., Dec. 14, 1925.

Identical with specimens from the Rio Branco and Venezuela.

The Boat-billed Flycatcher has a wide range in eastern South America, extending south to Paraguay and Misiones.

123. *Myiozetetes cayanensis cayanensis* (Linnaeus).

Muscicapa cayanensis Linnaeus, Syst. Nat., 12th ed., 1, p. 327, 1766—based on Brisson, Orn., 2, p. 404, pl. 38, fig. 4, Cayenne.

Maranhão: Tury-assú, ♀ ad., Oct. 12, 1923.

Like examples from Pará, Minas Geraes (Rio Jordão, near Aragua), and Goyaz, this bird appears to be inseparable from a Guianan series.

124. *Myiozetetes similis similis* (Spix).

Muscicapa similis Spix, Av. Bras., 2, p. 18, 1825—part, Amazon River (type in Munich Museum examined).

Myiozetetes similis Reiser, pp. 74, 161—Parnaguá and below Urubú-Sinho Falls, Rio Parnahyba, Piauí.

Maranhão: Rosario, ♀ imm., Apr. 22, 1924; Codó, Cocos, ♀ ad., June 12, 1924.

Piauí: Arára, ♂ ad., Jan. 21, 1925.

Additional specimen.—Ceará: Serra de Baturité, ♂ ad., July 17, 1913. R. H. Becker.

An east-Brazilian form ranging north to Lower Amazonia. Nearly allied races are found in Peru and Venezuela.

[125. *Tyrannopsis sulphurea* (Spix).]

Muscicapa sulphurea Spix, Av. Bras., 2, p. 16, pl. 20, 1825—Brazil (type in Munich Museum examined).

Tyrannopsis sulphureus Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 62, 1926—Anil, Maranhão.

Maranhão: São Luiz, ♀ juv., May 30, 1905. F. Schwanda (Sophia Museum).

A single young bird without yellow in the crown is the only specimen I have seen from this region. Birds from the sources of the Rio Araguaya, Goyaz, and the Pará district are identical with the type.

Though widely distributed in tropical eastern South America, the Sulphury Flycatcher is nowhere common.]

126. *Pitangus sulphuratus maximiliani* (Cabanis and Heine).

Saurophagus maximiliani Cabanis and Heine, Mus. Hein., 2, p. 63, 1859—Brazil.

Pitangus sulphuratus maximiliani Reiser, pp. 74, 162—Riacho da Raiz, below União, Rio Parnahyba, Piahy.

Maranhão: Mangunça Island, ♀ ad., March 19, 1924; Rosario, ♀ ad., May 7, 1924.

Piahy: Ibiapaba, ♀ ad., Jan. 2, 1925.

Additional specimen.—Ceará: Quixada, ♀ ad., June 20, 1913. R. H. Becker.

The birds from Piahy and Ceará are typical of *maximiliani*, agreeing with others from Bahia and Matto Grosso.

The status of the specimens occurring in the coast region of Maranhão is uncertain. They are darker, both above and below, and have less white about the forehead. It is quite possible that a more satisfactory series may show them to be more properly referable to *P. s. sulphuratus*. With only two (somewhat worn) skins at hand, the question must be left in abeyance.

127. *Pitangus lictor lictor* (Lichtenstein).

Lanius lictor Lichtenstein, Verz. Dubl. Berliner Mus., p. 49, 1823—Pará.

Maranhão: São Luiz, Anil, ♂ ad., Aug. 15, 1923.

The Lictor Flycatcher has an extensive distribution in eastern South America, ranging from Venezuela and Guiana southwards to southern Brazil (Rio de Janeiro and Matto Grosso), while the smaller *P. lictor panamensis* represents it in Panama and along the Caribbean littoral of Colombia.

128. *Myiarchus tyrannulus bahiae* Berlepsch and Leverkühn.

Myiarchus bahiae Berlepsch and Leverkühn, Orn. 6, p. 17, in text, 1890—Bahia.

Myiarchus tyrannulus bahiae Reiser, pp. 76, 165—Serra near Parnaguá, Piauhý.

Maranhão: Tury-assú, ♂ ad. (in worn breeding plumage), Oct. 5, 1923; Mangunça Island, ♂ ad., March 11, 1924; São Luiz, two ♀ ♀ ad., Aug. 2, 21, 1923.

Piauhý: Arára, ♀ ad. (in worn breeding plumage), Jan. 24, 1925.

The Maranhão specimens agree with others from Bahia and São Paulo, while the Arára bird, in tail markings, approaches *M. t. pallescens*, of Ceará.

An east-Brazilian form, ranging from the lower Amazon south to Rio de Janeiro and São Paulo.

129. *Myiarchus tyrannulus pallescens* Cory.

Myiarchus tyrannulus pallescens Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 343, 1916—Juá, Ceará.

Ceará: Juá, near Iguatú, two ♂ ♂ ad., Aug. 16, 21, 1913. R. H. Becker.

These two specimens, apparently the only ones in existence, differ so conspicuously from a large series of *M. t. bahiae* by reason of much lighter, more greenish (near citrine drab) upper parts and paler, more whitish throat and chest that I cannot but recognize this form as distinct, though examination of additional material is highly desirable. The rufous areas in the tail appear to be more extensive as well as better defined, thus approaching the pattern of *M. tyrannulus chlorepsciscus* Berl. and Leverk., of Matto Grosso.

130. *Myiarchus pelzelni pelzelni* Berlepsch.

Myiarchus pelzelni Berlepsch, Ibis, (4), 1, p. 139, 1883—Bahia; Reiser (2), p. 165, 1925—coast of Piauhý.

Myiarchus ferox cantans (not of Pelzel) Reiser (1), p. 76, 1910—part, No. 1319, coast district of Piauhý.

Maranhão: São Bento, ♂ ad., Sept. 7, 1923; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 30, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., Aug. 1, 1913. R. H. Becker.—Piauhy: coast district, ♀ ad., Sept. 14, 1903. O. Reiser (Vienna Museum).

The specimens agree with skins from Bahia and Mexiana Island.

A species of the open country, sparingly diffused in suitable localities throughout the northern and interior part of Brazil and the adjoining states, and represented in Argentina and Bolivia by the somewhat larger *M. pelzelni ferocior* Cabanis.

131. *Myiarchus ferox ferox* (Gmelin).

Muscicapa ferox Gmelin, Syst. Nat., 1, (2), p. 934, 1789—primarily based on "Le Tyran, de Cayenne" Brisson, Orn., 2, p. 398, Cayenne.

Myiarchus ferox swainsoni (not of Cabanis and Heine) Reiser (2), p. 165, 1925—Miritiba, Maranhão.

Maranhão: Mangunça Island, ♂ ad., March 21, 1924; São Luiz, two ♂ ad., July 28, Aug. 9, 1923; São Bento, ♂ ad., Sept. 3, 1923.

These birds as well as a number of Bahia skins are obviously inseparable from a Guianan series.

132. *Myiarchus tuberculifer tricolor* Pelzeln.

Myiarchus tricolor Pelzeln, Orn. Bras., 2, pp. 117, 182, 1868—Rio de Janeiro and Sapitiba, state of Rio de Janeiro (types examined).

Maranhão: Tury-assú, ♀ ad., Oct. 16, 1923.

Rather larger than the types and specimens from Bahia. This rather unsatisfactory race is supposed to be restricted to the coast region of Brazil (south to Rio de Janeiro) and French Guiana.

133. *Myiochanes cinereus pallescens* Hellmayr.

Myiochanes cinereus pallescens Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 194, 1927—São Marcello, Rio Preto, Bahia.

Blacicus pileatus (not *Contopus pileatus* Ridgway) Reiser, pp. 76, 165—below Queimadas, Rio Parnahyba, Piauhy.

Maranhão: Ponto (Canella), ♀ ad., Aug. 30, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 20, 1925.

Additional specimen.—Piauhy: below Queimadas, Rio Parnahyba, ♀ ad., Aug. 10, 1903. O. Reiser (Vienna Museum).

This is a northern form of *M. c. cinereus*, of southeastern Brazil, immediately distinguishable by its much paler coloring, the pileum being dusky rather than blackish, the back lighter olive gray, with suggestions of pale edges to the larger wing coverts, and the under parts extensively pale yellowish along the abdominal line, with the chest and sides much paler grayish.

Birds from Quipapá (Pernambuco), Piraputanga (Matto Grosso), northern Argentina (Manantial and Tafi Viejo, Tucumán), and extreme northern Paraguay (Colonia Risso, Río Apa) agree exactly with those from more northern localities.

M. cinereus cinereus (Spix) seems to be restricted to the wooded region of southeastern Brazil (from Minas Geraes and Espírito Santo to Paraná) and the adjoining districts of Argentina (Misiones) and Paraguay. Specimens from northern São Paulo, while somewhat intermediate, are as a whole better referred to the typical race.

134. ***Cnemotriccus fuscatus bimaculatus*** (Lafresnaye and d'Orbigny).

Muscipeta bimaculata Lafresnaye and d'Orbigny, Syn. Av., 1, in Mag. Zool., 7, cl. 2, p. 48, 1837—Yungas, Bolivia (type in Paris Museum examined).

Empidochanes fuscatus bimaculatus Reiser, pp. 75, 164—Lagôa Missão and Santo Antonio de Gilboez, Piauhý.

Maranhão: São Bento, two ♂♂ ad., Sept. 6, 12, 1923; Grajahú, two ♂♂ ad., ♀ ad., Oct. 18, 21, 30, 1924; Barra do Corda, ♂ imm., Aug. 23, 1924; Codó, Cocos, ♂ ad., June 25, 1924; Tranqueira, two ♀♀ ad., Aug. 22, 25, 1925.

Piauhý: Arára, two ♂♂ ad., Jan. 26, 27, 1925.

Additional specimen.—Ceará: Juá, near Iguatú, ♀ ad., Sept. 1, 1913. R. H. Becker.

The series exhibits much individual variation, not only in the shade of the upper parts, but also in the amount of yellowish suffusion on the belly, some specimens being almost pure white, while the single Ceará bird has the abdomen very nearly as bright yellowish as typical *C. f. fuscatus* from southeastern Brazil.

The Western Dusky Flycatcher is widely distributed in the campo region of Brazil south of the Amazon, ranging in the west to the Purús River, Matto Grosso, and eastern Bolivia, and stretching south into Paraguay and northern Argentina. North of the Amazon it is replaced by *C. fuscatus fumosus* (Berlepsch).

135. *Terenotriccus erythrurus hellmayri* (Snethlage).

Myiobius erythrurus hellmayri Snethlage, Ornith. Monatsber., 15, p. 195, 1907—Pará.

Maranhão: Tury-assú, ♂ ad., Dec. 10, 1923.

An Amazonian form, ranging along the south bank of the river and its tributaries west to western Matto Grosso and extending east into the forested coast belt of northern Maranhão.

136. *Myiobius atricaudus snethlagei* Hellmayr.

Myiobius atricaudus snethlagei Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 240, 1927—Codó, Codos, Maranhão.

Myiobius mastacalis (not of Wied) Reiser (1), p. 75, 1910—Lake Parnaguá and Santa Philomena, Piahy.

"*Myiobius barbatus* (Gm.) (*atricaudus* Lawr.)" (sic) Reiser (2), p. 163, 1925—same localities.

Maranhão: Grajahú, ♂ ad., Oct. 24, 1924; Codó, Cocos, ♂ ad., June 28, 1924 (type); Barra do Corda, ♀ ad., Sept. 24, 1924; Fazenda Inhuma, Alto Parnahyba, two ♀ ♀ ad., July 16, 28, 1925; Tranqueira, ♂ ad., Aug. 29, 1925.

Additional specimens.—Piahy: Lagôa Missão, near Parnaguá, ♂ ad., ♀ imm., May 26, 1903; Santa Philomena, ♂ ad., July 14, 1903; Pedrinha, Lake Parnaguá, ♀ ad., May 24, 1903. O. Reiser (Vienna Museum).

This very interesting new form is a member of the *M. atricaudus* group which, as demonstrated by Todd, is clearly specifically different from *M. barbatus*, with which it has been associated by the majority of authors.

M. a. snethlagei is nearly related to the Orinocan race, *M. a. modestus* Todd, but differs by its much deeper, more buffy yellow (baryta instead of barium or citron yellow) rump, brighter (colonial buff to amber yellow) under parts, without any olive ochre tinge on chest or sides, more olivaceous crissum, and slightly darker (olive citrine rather than dull citrine) back. By the saturated tone of the yellow areas, it somewhat bridges the gap separating the northern races from *M. ridgwayi*, of southeastern Brazil, and strengthens the belief that this last-named species might ultimately turn out to be merely a geographical form of the same group. Proportions, shape of tail, and color-pattern are essentially the same as in *M. a. snethlagei*; but the yellow portions of the plumage are very much darker (about deep buff yellow), and the back is decidedly brownish.

M. a. snethlagei is as yet known only from the states of Maranhão and Piauhý in northern Brazil, while *M. ridgwayi* is restricted to the southeastern section of that country, ranging from Rio de Janeiro to São Paulo.¹

137. *Myiophobus fasciatus flammiceps* (Temminck).

Muscicapa flammiceps Temminck, Nouv. Rec. Pl. Col., livr. 24, pl. 144, fig. 3, July, 1822—"Brésil"; we suggest Rio de Janeiro.

Myiobius naevius (not *Muscicapa naevia* Boddaert) Reiser (1), p. 75, 1910—Lagôa Missão, Timbó, Parnaguá and Santo Antonio de Gilboez, Piauhý.

"*Myiobius naevius* (Bodd.)=*fasciatus* (Müll.)" (sic) Reiser (2), p. 164, 1925—Piauhý.

Maranhão: São Bento, ♂ ad., ♀ ad., Sept. 4, 8, 1923; Tranqueira, two ♂♂ ad., ♀ imm., Sept. 12, 16, 1925; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 21, 1925.

Piauhý: Arára, ♀ ad., Feb. 2, 1925.

Additional specimen.—Ceará: Serra de Baturité, ♂ ad., July 19, 1913. R. H. Becker.

This series agrees well with two skins from Rio de Janeiro. Specimens from southern Brazil and Argentina average slightly larger.

The Southern Banded Flycatcher is extensively distributed in Brazil south of the Amazon, and neighboring countries. A closely allied race, *M. f. fasciatus* (Müller), occurs in Guiana, Trinidad, Venezuela, and Colombia.

138. *Hirundinea bellicosa bellicosa* (Vieillot).

Tyrannus bellicosus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 35, p. 74, 1819—based on Azara, No. 189, Paraguay.

Hirundinea bellicosa Reiser, pp. 75, 163—Parnaguá and Burity, Piauhý.

Maranhão: Tranqueira, ♂ imm., Aug. 19, 1925; Fazenda Inhuma, Alto Parnahyba, ♀ ad., ♀ imm., July 20, 23, 1925.

Additional specimen.—Ceará: Quixada, ♂ ad., June 18, 1913. R. H. Becker.

These specimens are more uniform tawny below, with less dusky suffusion on the chest, than others from Minas Geraes and Bahia.

¹*Myiobius barbatus mastacalis* (Wied), originally described from Bahia and widely diffused along the south bank of the lower Amazon, may yet be discovered in the region covered by this paper. "*M. barbatus xanthopygius*" and "*M. barbatus*," lately recorded by Madame Snethlage (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, pp. 43, 62, 1926) from Tury-assú, Maranhão, and Ceará probably refer to this form.

Azara's Swallow-Flycatcher is generally distributed throughout the campo region of Brazil, from Maranhão and Ceará south to Paraguay, Misiones, and Rio Grande do Sul.

[139. *Onychorhynchus coronatus coronatus* (Müller).

Muscicapa coronata P. L. S. Müller, Natursyst., Suppl., p. 168, 1776—based on Daubenton, Pl. Enl. 289, Cayenne.

Onychorhynchus coronatus Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 62, 1926—Tury-assú, Maranhão.

Madame Snethlage's record extends the range of the Royal Flycatcher from Pará to northern Maranhão.]

140. *Platyrinchus saturatus* Salvin and Godman.

Platyrhynchus saturatus Salvin and Godman, Ibis, (4), 6, p. 78, 1882—Merumé Mountains, British Guiana (type examined).

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., Nov. 20, 1923.

A Guianan Lower-Amazonian species whose range extends eastwards into the forest belt of northern Maranhão.

141. *Platyrinchus mystaceus mystaceus* Vieillot.

Platyrhynchus mystaceus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 27, p. 14, 1818—based on Azara, No. 173, Paraguay = San Ignacio Guazú, southern Paraguay.

Platyrhynchus mystaceus Reiser, pp. 71, 157—São Gonçalinho and Riacho da Raiz, Piauhý.

Maranhão: Rosario, four ♂♂ ad., ♂ imm., ♀ ad., Apr. 21, 22, 28, May 7, 13, 20, 1924; Grajahú, ♂ ad., Oct. 18, 1924.

Identical with specimens from Bahia and Minas Geraes.

The Yellow-crested Flat-bill inhabits the wooded districts of eastern Brazil and adjacent countries, reaching in Maranhão and Piauhý the northern limit of its range. Closely allied races are found in Matto Grosso and north of the Amazon.

142. *Tolmomyias sulphureus sulphureus* (Spix).

Platyrhynchus sulphureus Spix, Av. Bras., 2, p. 10, pl. 12, fig. 1, 1825—part, description of "male" and hab. Rio de Janeiro and Piauhý.

Rhynchocyclus sulphureus Reiser, pp. 74, 162—Pé do Morro, near Parnaguá, Piauhý.

Maranhão: Grajahú, two ♀♀ ad., Oct. 11, 25, 1924.

Additional specimen.—Piauí: Pé do Morro, ♂ imm., June 16, 1903. O. Reiser (Vienna Museum).

These birds agree in every particular with skins from Minas Geraes and São Paulo, and must doubtless be referred to typical *T. s. sulphurescens*, a form of wide distribution throughout southern and eastern Brazil and extending into Paraguay, eastern Bolivia, and northern Argentina.

143. *Tolmomyias sulphurescens assimilis* (Pelzelin).

Rhynchocyclus assimilis Pelzelin, Orn. Bras., 2, pp. 110, 181, 1868—part, types from Borba, Rio Madeira, in Vienna Museum examined.

Maranhão: Tury-assú, two ♂♂ ad., Oct. 26, 27, 1923; Tury-assú, Alto de Alegria, two ♂♂ ad., Nov. 14, 15, 1923.

The two birds from Alto de Alegria agree with a series from Benevides (east of Pará) and the right bank of the Tapajóz River (Santarém, Colonia do Mojuy, Miritituba) in size as well as in coloration. Specimens of *T. s. assimilis* from the left side of the Tapajóz (Villa Braga) and the Rio Madeira have the crown more uniform plumbeous and the back, as a rule, slightly duller green, but the divergency is insignificant.

The two skins from Tury-assú are exactly intermediate between *sulphurescens* which they closely resemble on the upper parts, and *assimilis*, of which they partake of the whitish throat, the remainder of the ventral surface being, however, rather brighter yellow.

T. s. assimilis is an Amazonian form extending its range eastwards into the forested coast-belt of Maranhão, while in the drier interior districts its place is taken by the south-Brazilian *T. s. sulphurescens*.

144. *Tolmomyias poliocephalus sclateri* (Hellmayr).

Rhynchocyclus poliocephalus sclateri Hellmayr, Verh. Zool. Bot. Ges. Wien, 53, p. 207, 1903—Barra do Rio Negro = Manáos, Brazil.

Maranhão: Tury-assú, ♀ ad., ♀ imm., Oct. 24, Nov. 29, 1923.

A Guianan Lower-Amazonian representative, ranging along the Brazilian coast south to Bahia. A closely allied form occurs in Upper Amazonia.

145. *Tolmomyias flaviventris flaviventris* (Wied).

Muscipeta flaviventris Wied, Beitr. Naturg. Bras., 3, (2), p. 929, 1831—Mucuri and Alcobaça, Espírito Santo, Brazil.

Rhynchocyclus flaviventris Reiser, pp. 74, 162—Parnaguá, Pedrinha, Burity, Therezina, and above Pintados, Piauí.

Goyaz: Philadelphia, lower Tocantins, ♀ ad., Dec. 14, 1925.

Maranhão: Tury-assú, two ♂♂ ad., ♀ ad., Oct. 6, 9, 13, 1923; São Bento, ♀ juv., Sept. 8, 1923; Rosario, two ♂♂ (in molt), Apr. 24, May 13, 1924; Barra do Corda, ♂ ad., Sept. 18, 1924; Codó, Cocos, ♀ ad., June 21, 1924.

Piauí: Ibiapaba, ♂ ad., Jan. 2, 1925.

Ceará: Varzea Formosa, ♂ ad., ♂ imm., Feb. 18, 25, 1925.

Additional specimens.—Ceará: Quixada, ♂ juv., June 19, 1913; Juá, near Iguatú, ♂ ad., three ♀♀ ad., Aug. 17, 18, 20, 21, 1913. R. H. Becker.

An east-Brazilian species, ranging from Espírito Santo north to the south bank of the lower Amazon.

146. *Rhynchocyclus olivaceus guianensis* McConnell.

Rhynchocyclus olivaceus guianensis McConnell, Bull. Brit. Orn. Cl., 27, p. 106, 1911—British Guiana.

Maranhão: Tury-assú, Alto de Alegria, (♂) ad., Nov. 20, 1923.

Like two specimens from near Pará, this bird has somewhat narrower and paler (dark olive buff instead of warm buff) edges to the greater wing coverts than a small series of *guianensis* from French Guiana and eastern Venezuela. Additional material may show them to be separable from both *R. o. olivaceus*, of eastern Brazil (Rio de Janeiro to Bahia), and *R. o. guianensis*, from north of the Amazon.

147. *Todirostrum chrysocrotaphum illigeri* (Cabanis and Heine).

Triccus illigeri Cabanis and Heine, Mus. Hein., 2, p. 49, 1859—Pará (type in Berlin Museum examined).

Maranhão: Tury-assú, ♂ ad., ♀ ad., Dec. 13, 1923, Jan. 4, 1924.

A Lower-Amazonian form ranging from the Tocantins to northern Maranhão. Replaced farther west by *T. c. chrysocrotaphum* Strickl.

148. *Todirostrum cinereum cearae* Cory.

Todirostrum cinereum cearae Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 342, 1916—Serra de Baturité, Ceará.

Maranhão: Tury-assú, ♂ ad., Nov. 27, 1923; São Bento, ♂ ad., Sept. 8, 1923; Rosario, ♂ ad., ♀ ad., May 5, 8, 1924; Barra do Corda, ♀ imm., Aug. 21, 1924; Codó, Cocos, ♀ ad., June 11, 1924.

Piahy: Ibiapaba, ♂ ad., ♀ ad., Dec. 14, 1924, Jan. 2, 1925; Deserto, ♀ ad., March 28, 1925.

Additional specimen.—Ceará: Serra de Baturité, ♂ ad., July 18, 1913. R. H. Becker (type of subspecies).

The male from São Bento agrees with the type in color of back, while all the rest of the series are somewhat paler, more washed with greenish above. This form is nearly allied to *T. c. cinereum*, of northern South America, but may be distinguished by slightly smaller size, paler slate gray and more olivaceous back, more whitish wing markings, and longer white tips to external rectrices. In the last-named character, it resembles *T. c. coloreum* Ridgw., of southwestern Brazil, but this form is larger and much greener above, with the wing markings bright yellow instead of buffy white.

T. c. cearae is peculiar to northeastern Brazil. In addition to the series listed above, I have examined specimens from Pernambuco and Bahia.

149. **Todirostrum maculatum maculatum** (Desmarest).

Todus maculatus Desmarest, Hist. Nat. Tang., Manak. et Todiers, livr. 10, pl. 70, 1806—French Guiana.

Maranhão: Tury-assú, ♂ ad., Nov. 26, 1923; São Luiz, ♂ ad., Aug. 6, 1923.

The Spotted Tody-Tyrant is peculiar to the Guianas and Lower Amazonia, reaching the southern limit of its range in northern Maranhão.

150. **Todirostrum fumifrons fumifrons** Hartlaub.

Todirostrum fumifrons Hartlaub, Journ. Orn., 1, p. 35, 1853—Brazil.

Maranhão: Grajahú, ♂ ad., Oct. 11, 1924; Barra do Corda, ♂ ad., ♀ ad., Aug. 18, Sept. 17, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 21, 1925; Tranqueira, ♂ ad., Aug. 27, 1925.

"Iris brown, feet slate gray, bill black, base of mandible pale gray."—Wing 45-47, (female) 44; tail 34-36, (female) 33; bill 12-13.

These examples extend the range of this scarce Flycatcher far to the north, the only recorded locality being Bahia in eastern Brazil. In Guiana it is represented by the closely allied *T. fumifrons penardi* Hellmayr.

[151. **Todirostrum mirandae** Snethlage.

Todirostrum mirandae Snethlage, Journ. Orn., 73, p. 266, 1925—São Paulo, Serra de Ibiapaba, Ceará.

Ceará: São Paulo, Serra de Ibiapaba, adult (unsexed), June 11, 1910. E. Snethlage (Berlin Museum).

A very distinct species with no near relative, as yet known only from the Serra de Ibiapaba, in western Ceará.

Its characters are given at length in Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 305, 1927.]

152. *Todirostrum sylvia schulzi* Berlepsch.

Todirostrum schulzi Berlepsch, Ornith., 14, p. 355, 1907—Ourém, Rio Guamá, Pará (type examined).

Todirostrum schistaceiceps schulzi Reiser, pp. 72, 157—Riacho da Raiz, below União, Rio Parnahyba, Piauí.

Maranhão: Rosario, ♂ ad., ♂ imm., Apr. 22, May 20, 1924; São Bento, ♂ ad., juv., Aug. 30, Sept. 7, 1923; São Luiz, ♂ ad., Aug. 21, 1923.

Additional specimen.—Piauí: Riacho da Raiz, Rio Parnahyba, ♀ ad., Aug. 29, 1903. O. Reiser (Vienna Museum).

This exceedingly well-marked race has been recorded only from the Pará district and the adjacent section of northern Brazil, east to the lower Parnahyba in Piauí, whence Reiser secured a single female at Riacho da Raiz, below União.

Immature birds have the crown tinged with greenish; the wing markings olive ocher instead of lemon yellow; the supraloral streak buffy instead of nearly white; the chest paler grayish; finally the flanks strongly washed with greenish yellow. They exhibit a decided tendency in the direction of *T. sylvia griseolum*, furnishing another proof of the intimate relationship of the various races.

153. *Euscarthmornis striaticollis striaticollis* (Lafresnaye).

Todirostrum striaticolle Lafresnaye, Rev. Mag. Zool., (2), 5, p. 58, 1853—Bahia.

Euscarthmus striaticollis (sic) Reiser (1), p. 72, 1910—Parnaguá, below Nova York and above Pintados, Rio Parnahyba, Piauí.

Euscarthmus striaticollis Reiser (2), p. 158, 1925—same localities.

Goyaz: Philadelphia, ♂ ad., Dec. 4, 1925.

Maranhão: São Bento, four ♂♂ ad., three ♀♀ ad., Sept. 1, 5, 6, 8, 12, 1923; Rosario, three ♂♂ ad., ♀ ad., Apr. 19, 24, May 8, 9, 1924; Barra do Corda, ♂♀ ad., Aug. 22, 23, 1924; Codó, Cocos, ♂ ad., July 8, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 21, 1925.

Agreeing with specimens from the Rio Preto (São Marcello) and the vicinity of Bahia City (Santo Amaro). There is much individual variation in the shade of the upper parts and the intensity of the yellow color underneath, although every one of the sixteen skins has the crown decidedly brownish olive.

E. s. striaticollis is peculiar to the Brazilian table-land, ranging from Maranhão south to Bahia, and west to Matto Grosso. On the lower Amazon, from the Tapajóz to the Rio Madeira, it is represented by *E. s. griseiceps* (Todd), while other allied races are found in Upper Amazonia.

154. *Euscarthmornis margaritaceiventer wuchereri* (Sclater and Salvin).

Euscarthmus wuchereri Sclater and Salvin, Nomencl. Av. Neotrop., p. 158, 1873—Bahia (type examined).

Euscarthmus margaritaceiventer wucheri (sic) Reiser, pp. 72, 157—Parnaguá, and below Nova York, Rio Parnahyba, Piauhý.

Euscarthmus impiger cearae Cory, Auk, 37, p. 109, 1920—Juá, near Iguatú, Ceará.

Maranhão: Grajahú, two ♂♂ ad., Oct. 17, 23, 1924; Barra do Corda, three ♂♂ ad., Aug. 21, Sept. 18, 22, 1924; Fazenda Inhuma, Alto Parnahyba, two ♂♂ ad., July 23, 24, 1925.

Piauhý: Arára, ♂ juv., two ♀♀ ad., Jan. 21, 23, 29, 1925; Deserto, ♀ ad., March 30, 1925; Ibiapaba, two ♂♂ ad., Dec. 23, 30, 1924.

Additional specimens.—Ceará: Juá, near Iguatú, three ♀♀ ad., Aug. 1, 16, 20, 1913. R. H. Becker.

This race differs from typical *E. m. margaritaceiventer* by having duller, much less greenish back, and more distinctly streaked throat, and by lacking the yellowish tinge on the flanks. The Ceará birds (*E. impiger cearae* Cory) are precisely similar to a Bahia skin and the series secured by Dr. Snethlage.

E. m. wuchereri replaces the typical form in the table-land of northeastern Brazil, ranging from Bahia north to Ceará and the interior of Maranhão.

155. *Colopteryx galeatus* (Boddaert).

Motacilla galeata Boddaert, Tabl. Pl. Enl., p. 24, 1783—based on Daubenton, Pl. Enl. 391, fig. 1, Cayenne.

Maranhão: São Luiz, two ♂♂ ad., Aug. 1, 8, 1923.

Identical with specimens from near Pará.

The Helmeted Pygmy-Tyrant is a species peculiar to Guiana and Lower Amazonia, whose distributional area stretches into the forest belt of northern Maranhão.

156. *Euscarthmus meloryphus meloryphus* Wied.

Euscarthmus meloryphus Wied, Beitr. Naturg. Bras., 3, (2), p. 947, 1831—boundary line of Minas Geraes and Bahia.

Haplocercus meloryphus Reiser, pp. 72, 158—Queimadas and above Pintados, Rio Parnahyba, Piauhý.

Maranhão: Tranqueira, ♂ ad., two ♀ ♀ ad., Aug. 24, 26, 1925.

Piauhý: Ibiapaba, two ♂ ♂ ad., Dec. 30, 1924; Arára, five ♂ ♂ ad., Jan. 24, 27, 28, 29, 30, 1925.

Similar to specimens from Bahia (Macaco Secco) and Matto Grosso (Descalvados).

Widely distributed throughout the Brazilian table-land south to São Paulo and Matto Grosso; also found in northern Argentina, Bolivia, Venezuela, and Colombia.

157. *Euscarthmus rufomarginatus* (Pelzeln).

Haplocercus rufomarginatus Pelzeln, Orn. Bras., 2, pp. 103, 174, 1868—Calzão do Couro and Rio das Pedras, northern São Paulo (types examined); Reiser, pp. 72, 158—Corrientes, Rio Parnahyba, Piauhý.

Maranhão: Ponto (Canella), ♂ ad., Aug. 29, 1924.—Wing 44; tail 51; bill 10.—“Iris brown, feet dark gray, bill black.”

Additional specimens.—Piauhý: Corrientes, Rio Parnahyba, ♂ ad., ♀ ad., July 26, 1903. O. Reiser (Vienna Museum).

Compared with the three typical examples from São Paulo, these birds are duller, less rufescent brown above, and have less ochraceous on the chest; but whether this difference is seasonal or racial remains to be ascertained by the study of further material. As I have pointed out elsewhere,¹ *E. rufomarginatus* is a very distinct species, though recalling *Habrura pectoralis* in coloration of under parts. So far, only six specimens are on record, all taken in the interior of Brazil. Natterer secured a couple at Rio das Pedras and a single female at Calzão do Couro, in the northern section of São Paulo, in April, 1823, and eighty years later, Reiser shot a pair of adults at Corrientes, on the upper Parnahyba, Piauhý.

¹Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 360, 1927.

[158. *Stigmatura budytoides bahiae* Chapman.

Stigmatura budytoides bahiae Chapman, Amer. Mus. Novit., 231, p. 4, 1926—Joazeiro, Bahia.

Stigmatura budytoides (not of Lafresnaye and d'Orbigny) Reiser, pp. 72, 158—Lake Parnaguá, Piauhý.

Piauhý: Lake Parnaguá, ♀ ad. (molting), May 14, 1903. O. Reiser (Vienna Museum).

This specimen as well as five others from Joazeiro, Bahia, being all in worn or molting condition, are not of much use for comparative purposes. We have, however, an adult male in fairly good plumage, secured by R. H. Becker on December 8, 1913, at Rio do Peixe, near Queimadas, Bahia, which tends to show that the east-Brazilian race, as claimed by its describer, is distinguishable by somewhat smaller size (wing 55-58, against 59-63; tail 66-72, against 74-81 mm. in *S. b. budytoides*, from Bolivia); more extensive white band across the inner web of the lateral rectrices, particularly on the fourth pair (from without); and by lacking the buffy tinge on the foreneck. The yellow of the under parts, however, is just as bright as in Bolivian examples.

S. budytoides bahiae is peculiar to eastern Brazil, it having been recorded from the states of Bahia (Joazeiro, Rio São Francisco; Rio do Peixe, near Queimadas) and Piauhý (Lake Parnaguá). In Amazonia it is represented by *S. budytoides napensis* Chapman, with yellowish tail markings.]

[159. *Serpophaga subcristata* (Vieillot).

Sylvia subcristata Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 11, p. 229, 1817—based on Azara, No. 160, Paraguay.

Serpophaga subcristata Reiser, pp. 72, 159—Parnaguá and Lagôa Missão, Piauhý Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—São Bento, Maranhão.

Piauhý: Parnaguá, two ♀ ♀ ad., May 14, June 12, 1903; Lagôa Missão, ♀ juv., May 29, 1903. O. Reiser (Vienna Museum).

The two adult females differ very slightly from a considerable series from southern Brazil, Paraguay, and Argentina by having more white in the crown, and paler, more greenish back. The difference is rather insignificant and requires corroboration by a larger series.

S. subcristata is widely diffused in Brazil, from southern Piauhý to Rio Grande do Sul, and neighboring countries.]

160. *Xenopsaris albinucha albinucha* (Burmeister).

Pachyrhamphus albinucha Burmeister, P. Z. S. Lond., for 1868, p. 635, 1869—sedges of the shores of the Río de la Plata, near Buenos Aires.

Xenopsaris albinucha Reiser, pp. 70, 156—Illa São Martin, Rio Parnahyba, Piahy.

Piahy: Illa São Martin, Rio Parnahyba, ♀ imm., Aug. 22, 1903. O. Reiser (Vienna Museum).—Wing 63; tail 59; bill 10.

Ceará: Juá, near Iguatú, ♀ imm., Aug. 13, 1913. R. H. Becker.—Wing 64; tail 59; bill 10.

The two localities constitute the most northerly records for the White-naped *Xenopsaris* whose range extends south to northern Argentina, while a smaller form, *X. albinucha minor* Hellmayr, inhabits the banks of the Orinoco in Venezuela.

161. *Elaenia flavogaster flavogaster* (Thunberg).

Pipra flavogaster Thunberg, Mém. Ac. Sci. St. Pétersb., 8, p. 286, 1822—Brazil = Rio de Janeiro.

Elainea pagana Reiser (1), p. 73, 1910—Parnaguá, Piahy (spec. examined).

Elainea flavogaster Reiser (2), p. 160, 1925—Parnaguá.

Maranhão: São Luiz (Anil), two ♀ ♀ ad., July 28, Aug. 1, 1923; São Bento, ♂ ad., ♀ ad., adult (unsexed), Sept. 1, 10, 13, 1923.

Additional specimen.—Piahy: Parnaguá, ♂ ad., May 16, 1903. O. Reiser (Vienna Museum).

The Parnaguá bird, an adult male in perfect plumage, which I have recently examined, proves to be a typical specimen of *E. f. flavogaster*. It shows no approach to *E. spectabilis*, now admitted to be specifically different, and measures: wing 82, tail 72 mm.

Generally distributed throughout eastern South America.

162. *Elaenia cristata* Pelzeln.

Elainea cristata Pelzeln, Orn. Bras., 2, pp. 107, 177, 1868—city of Goyaz, Goyaz (types examined) Reiser, pp. 74, 160—Santo Antonio de Gilboez, Piahy.

Goyaz: Philadelphia, lower Tocantins, ♂ imm., ♀ juv., Dec. 1, 12, 1925.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 29, 1925; Codó, Cocos, two ♂ ♂ ad., June 10, 21, 1924.

Additional specimens.—Piahy: Santo Antonio de Gilboez, ♂ ad., June 28, 1903. O. Reiser (Vienna Museum).—Ceará: unspecified, adult, Zietz (British Museum).

Identical with specimens from Bahia, Santarém, and the Rio Branco.

This well-characterized species is largely diffused in the campo region of Brazil, Guiana, and Venezuela.

163. *Elaenia chiriquensis albivertex* Pelzeln.

Elaenia albivertex Pelzeln, Orn. Bras., 2, pp. 107, 177, 1868—Ypanemá, São Paulo (type), Goyaz, and Forte do Rio Branco, Brazil.

Maranhão: Grajahú, ♂ ad., Oct. 29, 1924; Barra do Corda, ♀ ad., Aug. 21, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 29, 1925; Tranqueira, two ♀ ♀ ad., Aug. 26, Sept. 5, 1925.

The series agrees with specimens from other parts of Brazil.

The White-crowned *Elaenia* is extensively distributed in eastern South America, ranging from Colombia, Venezuela, and Guiana down to Paraguay and southern Brazil, while nearly allied forms are found on Fernando Noronha Island, in Central America, and on the Pacific coast of Colombia and Ecuador.

164. *Elaenia gaimardii guianensis* Berlepsch.

Elaenia gaimardii guianensis Berlepsch, Ornith., 14, p. 421, 1907—Camacusa, British Guiana.

Maranhão: São Luiz, ♂ ad., Aug. 6, 1923; Rosario, ♀ imm., May 16, 1924.

Goyaz: Santo Antonio (Bôa Vista), lower Tocantins, ♂ ad., Jan. 24, 1926.

As pointed out elsewhere,¹ the validity of this form is extremely doubtful. Two of the present specimens can barely be distinguished from Peruvian skins, while the female from Rosario is brighter green above than any other example in the series at hand.

165. *Elaenia viridicata viridicata* (Vieillot).

Sylvia viridicata Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 11, p. 171, 1817—based on Azara, No. 156, Paraguay.

Elaenia viridicata Reiser, pp. 73, 160—Parnaguá, Piahy.

Piahy: Deserto, ♂ ad., Apr. 1, 1925; Arára, ♂ ad., Jan. 28, 1925; Ibiapaba, five ♂ ♂ ad., Dec. 20, 23, 24, 1924, Jan. 2, 13, 1925.—Wing 63-65; tail 60-64.

¹ Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 430, 1927.

Examination of good series from various localities tends to demonstrate that *Elaenia grata* (Tucumán), *E. viridicata delicata* (Bahia), and *Myiopagis v. rondoni* (Matto Grosso) were based on individual rather than geographical variation, and it appears that the inhabitants of the table-land of Brazil, Bolivia, and adjacent sections of Paraguay, and northern Argentina are referable to a single form, the earliest name of which is *Sylvia viridicata* Vieillot.

Nearly related races are found in Venezuela, Colombia, and Central America, while the Guianas and Amazonia are tenanted by *E. flavivertex* Scl., which seems to be specifically different.

166. *Elaenia caniceps caniceps* (Swainson).

Tyrannula caniceps Swainson, Ornith. Draw., Part 5, pl. 49, before Dec., 1837—Brazil.

Elainea caniceps Reiser, pp. 74, 160—above Nova Castelliano, Rio Parnahyba, Piahy.

Maranhão: Codó, Cocos, ♂ ad., June 18, 1924.—Wing 59; tail 51; bill 9.

Additional specimen.—Piahy: above Nova Castelliano, Rio Parnahyba, ♀ ad., Aug. 11, 1903. O. Reiser (Vienna Museum).

The Cocos bird is in the plumage with grayish upper parts and white coronal patch and wing markings, described as *E. taczanowskii*, which is now known to represent merely an extreme stage of individual variation in the male sex. The bird from Piahy corresponds to the commoner type of coloration with greenish dorsal surface and yellow markings on pileum and wings.

E. c. caniceps is an inhabitant of the Brazilian table-land, ranging from the interior of Maranhão and Piahy south to São Paulo and stretching west into Paraguay and northern Argentina (prov. Jujuy). In Amazonia it is replaced by the allied *E. caniceps cinerea* Pelzeln.

167. *Suiriri affinis affinis* (Burmeister).

Elaenea affinis Burmeister, Syst. Übers. Th. Bras., 2, p. 477, 1856—Lagôa Santa, Minas Geraes (types in Halle Museum examined).

Empidagra affinis Reiser, pp. 74, 164—Serra near Parnaguá and Santo Antonio de Gilboez, Piahy.

Maranhão: Codó, Cocos, four ♀ ♀ ad., and imm., June 11, 13, 16, 20, 1924; Tranqueira, ♀ ad., Sept. 2, 1925.—Wing 78-83; tail 67-72; bill 13-14, once 11.

Additional specimens.—Piauhý: Serra near Parnaguá, ♂ ad., May 20, 1903; Santo Antonio de Gilboez, ♀ imm., July 1, 1903. O. Reiser (Vienna Museum).

Like a series from western Minas Geraes (Agua Suja, near Bagagem), these birds have the concealed basal portion of the tail pale yellowish and, with exception of the Tranqueira specimen, the rump and upper tail coverts olive buff, in decided contrast to the pale grayish olive of the back. Seven skins from northwestern Bahia (Rio Grande, Rio Preto, and Serra north of Santa Rita) in the Vienna Museum are perfectly similar.

The Tranqueira bird approaches *S. a. bahiae*, of eastern Bahia, by lacking the light uropygial area, and by having the pale basal zone of the rectrices less sharply defined.

Shape and length of bill are exceedingly variable, the Tranqueira bird being especially remarkable for its short, blunt, basally wide bill, recalling that of *Sublegatus modestus*. Notoriously young birds (with remains of the juvenile plumage) have a pale (brownish white to light horn color) mandible, but this peculiarity is also found in certain individuals which have all the appearance of being adult. The majority of adults, however, have the bill wholly black.

A characteristic species of the Brazilian campo region, ranging from Matto Grosso, Paraná, and western Minas Geraes north to the lower Amazon (Serra de Ereré, near Monte Alegre). In the eastern section of Bahia replaced by *S. affinis bahiae* (Berlepsch).

168. *Sublegatus modestus modestus* (Wied).

Muscipeta modesta Wied, Beitr. Naturg. Bras., 3, (2), p. 923, 1831—Camamú and Bahia, Brazil.

Sublegatus platyrhynchus Reiser (1), p. 74, 1910—Serra da Prata, Parnaguá, and Santa Philomena, Piauhý.

"*Sublegatus fasciatus* (Thunb.) = *platyrhynchus* (Scl. and Salv.)" (sic) Reiser (2), p. 161, 1925—same localities.

Maranhão: Fazenda Inhuma, Alto Parnahyba, two ♂♂ ad., July 27, 29, 1925; Tranqueira, ♀ ad., Aug. 24, 1925.

Identical with specimens from Bahia (São Marcello, Rio Preto) and Matto Grosso.

Wied's Flycatcher is widely distributed in the campo region of Brazil south of the Amazon, extending west into Peru, Bolivia, and northern Argentina. Nearly allied races are found north of the Amazon, in Guiana, Venezuela, etc.

169. *Phaeomyias murina murina* (Spix).

Platyrrhynchus murinus Spix, Av. Bras., 2, p. 14, pl. 16, fig. 2, 1825—Brazil.

Phaeomyias murina Reiser, pp. 73, 160—Parnaguá, Santo Antonio de Gilboez, Caiçara, Rio Parnahyba, and coast district, Piauhý.

Maranhão: Grajahú, two ♂♂ ad., ♀ ad., Oct. 21, 22, 1924; Codó, Cocos, ♂ ad., June 17, 1924; Fazenda Inhuma, Alto Parnahyba, adult (unsexed), July 24, 1925.

Piauhý: Ibiapaba, ♂ ad., Jan. 12, 1925.

Goyaz: Philadelphia, lower Tocantins, ♀ ad., (very worn), Nov. 26, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., three ♀♀ ad., juv., Aug. 1, 20, 29, Sept. 1, 4, 1913. R. H. Becker.

The series agrees with skins from Bahia, Minas Geraes, and other localities in eastern Brazil. In the north, this form ranges to the islands in the delta of the Amazon and to the Tapajóz; southwards it extends into Paraguay and adjacent countries.

A number of closely related forms occur in other parts of South America.

170. *Camptostoma obsoletum cinerascens* (Wied).

Hylophilus cinerascens Wied, Beitr. Naturg. Bras., 3, (2), p. 723, 1831—Barra do Jucú, Espírito Santo.

Ornithion cinerascens Reiser, pp. 73, 160—Olho d'Agua (near Parnaguá), Apertada Hora, Rio Parnahyba, and coast district, Piauhý.

Ornithion pusillum (errore) Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 44, 1926—Ceará.

Maranhão: Grajahú, ♀ ad., Oct. 22, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 29, 1925.

Piauhý: Arára, ♀ ad., Feb. 3, 1925.

Additional specimens.—Piauhý: Apertada Hora, Rio Parnahyba, ♂ ad., July 22, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., Aug. 3, 1913. R. H. Becker.

Birds from Piauhý and inner Maranhão agree precisely with a series from Bahia. Two topotypes from the Rio Espírito Santo are slightly more olivaceous above than the general run from more northern localities, though they can be matched by various examples. Many individuals, especially in fresh plumage, exhibit a pale yellowish tinge on the under parts, thus suggesting an approach to the Amazonian *C. o. napaenum* (Ridgw.).

C. o. cinerascens is a northern representative of the south-Brazilian *C. o. obsoletum*, with which it completely intergrades in Minas Geraes and northern São Paulo, while on the lower Amazon it is replaced by the yellow-bellied *C. o. napaeum*.¹

[171. *Xanthomyias virescens reiseri* (Hellmayr).

Phyllomyias reiseri Hellmayr, Bull. Brit. Orn. Cl., 15, p. 73, 1905—Grotão, on the road from Santo Antonio to Santa Philomena, Piauhý.

Xanthomyias reiseri Reiser, pp. 73, 159,—Grotão.

Piauhý: Grotão, road from Santo Antonio to Santa Philomena, ♂ ad., July 7, 1903. O. Reiser (Vienna Museum).—Wing 54; tail 50; bill 9.

This form, of which only the type is known, differs from *X. v. virescens*, of southeastern Brazil, in smaller size; ashy forehead; much brighter, more yellowish green back, with broader wing bands; more conspicuous yellowish superciliaries; and paler yellow under parts, obsoletely flammulated with whitish on the chest. It is obviously a northern representative of *X. v. virescens*, the latter ranging from Espirito Santo and Minas Geraes southward into Paraguay and Misiones.]

172. *Phyllomyias fasciatus fasciatus* (Thunberg).

Pipra fasciata Thunberg, Mém. Ac. Sci. St. Pétersb., 8, p. 285, 1822—Brazil (type in Upsala Museum examined).

Phyllomyias incanescens Reiser, pp. 73, 159—Parnaguá, Piauhý.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 17, 1925; Codó, Cocos, ♀ ad., June 28, 1924.

Additional specimen.—Piauhý: Parnaguá, ♂ ad., June 12, 1903. O. Reiser (Vienna Museum).

Wing 57, 58, (female) 54; tail 49, 50, (female) 43; bill 8.

The type of *Pipra fasciata*, kindly forwarded to me through the good offices of Dr. Lönnberg, agrees with Bahia skins in having the abdomen but very faintly tinged with yellowish, and the back dull grayish olive. The bird from Parnaguá, except for its slightly yellow lower belly, is very similar. The Maranhão specimens, on the other hand, are decidedly more greenish above and brighter yellow underneath, and closely resemble the type of *Sublegatus virescens* Allen,

¹"*Ornithion pusillum*" Snethlage (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926) from Turý-assú, coast of Maranhão, is most probably referable to the Lower-Amazonian race.

from Chapada, Matto Grosso, which differs only by its more grayish (less dusky) pileum. An adult male from Pão de Canôa, Rio Preto, n. w. Bahia, in the Vienna Museum, while identical in coloration with Bahia skins, approaches *P. f. cearae* in dimensions.

P. f. fasciatus is peculiar to the campo region of Maranhão, Piahy, and Bahia, but its distribution may be more extensive, since the distinctness of *P. f. virescens* (Allen), of Goyaz and Matto Grosso, is open to doubt.

173. *Phyllomyias fasciatus cearae* Hellmayr.

Phyllomyias fasciatus cearae Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 5, p. 466, 1927—Serra de Baturité, Ceara.

Ceará: Serra de Baturité, two ♂♂ ad., three ♀♀ ad., July 12, 17, 21, 1913. R. H. Becker.—Wing 61, 62, (female) 56-57; tail 54, 57, (female) 49-51; bill 7-8.

This series differs from *P. f. fasciatus*, as represented by fifteen specimens from Bahia, Piahy, and Maranhão, in larger size, much more greenish (olive citrine to buffy olive instead of grayish olive) upper, and much more yellowish under parts, and is doubtless separable subspecifically. In size, it closely approaches the south-Brazilian *P. fasciatus brevirostris* (Spix), from which it is, however, easily distinguished by much duller upper parts, extensively whitish throat, and much paler yellowish breast and abdomen.

As a whole, the Ceará form stands somewhat between *fasciatus* and *brevirostris*, being darker than the former, but lighter than the latter.

At present, it is only known from the Serra de Baturité, in northern Ceará.

174. *Tyranniscus acer* Salvin and Godman.

Tyranniscus acer Salvin and Godman, Ibis, (5), 1, p. 206, 1883—Bartica Grove and Camacusa, British Guiana.

Tyranniscus gracilipes (not of Sclater and Salvin) Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—Anil and Tury-assú, Maranhão.

Maranhão: Tury-assú, ♂ ad., Oct. 16, 1923; Codó, Cocos, ♀ juv., June 28, 1924.

A Guianan-Lower-Amazonian species whose range stretches through the forested area of northern Maranhão as far east as the Rio Itapicurú.

175. *Tyrannulus elatus elatus* (Latham).

Sylvia elata Latham, Ind. Orn., 2, p. 549, 1790—based on Daubenton, Pl. Enl. 708, fig. 2, Cayenne.

Maranhão: Rosario, ♂ ad., April 28, 1924.

Another Amazonian representative which extends its range into the forest belt of northern Maranhão.

[176. *Ornithion inerme* Hartlaub.

Ornithion inerme Hartlaub, Journ. Orn., 1, p. 35, 1853—South America = Bahia; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—Tury-assú, Maranhão.

A single specimen of Hartlaub's Tyrannulet was secured by Madame Snethlage at Tury-assú. Rather widely diffused in Guiana and Amazonia, it ranges through eastern Brazil as far south as Bahia.]

177. *Leptopogon amaurocephalus amaurocephalus* Tschudi.

Leptopogon amaurocephalus Tschudi, Faun. Peru., Aves, p. 162, footnote, 1846—São Paulo, Brazil.

Maranhão: Tranqueira, ♂ ad., Aug. 27, 1925.—Wing 69; tail 61; bill 14.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Jan. 24, 1926.—Wing 65; bill 13.

Apparently not different from Bahia and south-Brazilian examples. Generally diffused throughout eastern and central Brazil (south of the Amazon) and the neighboring countries.

178. *Pipromorpha oleaginea oleaginea* (Lichtenstein).

Muscicapa oleaginea Lichtenstein, Verz. Dubl. Berliner Mus., p. 55, 1823—Bahia (type in Berlin Museum examined).

Maranhão: São Luiz, ♀ ad., Aug. 13, 1923.—Wing 57; tail 46; bill 10.

Identical with specimens from Bahia (Santo Amaro) and Amazonia.

This is a Guianan-Amazonian species, ranging south to Bahia and Matto Grosso.

179. *Piprites chloris chlorion* (Cabanis).

Hemipipo chlorion Cabanis, Arch. Naturg., 13, (1), p. 234, 1847—Cayenne.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., Nov. 8, 1923.—Wing 66; tail 45.

Agreeing in coloration with specimens from British Guiana, but decidedly smaller. A male from Manáos, however, is hardly larger. This is a Guianan form whose range stretches through Lower Amazonia to the forested area in northwestern Maranhão.

[180. *Pipra pipra cephalaeus* Thunberg.

Pipra cephalaeus Thunberg, Mém. Ac. Sci. St. Pétersb., 8, p. 286, 1822—Brazil¹ (=male in first annual plumage); see Lönnberg, Ibis, 1903, p. 241 (crit.).

Pipra leucocilla (not of Linnaeus) Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—Tury-assú, Maranhão.

Recorded by Madame Snethlage from Tury-assú. The range of the Slate-bellied Manakin extends from Pará south to Rio de Janeiro.]

[181. *Antilophia galeata* (Lichtenstein).

Pipra galeata Lichtenstein, Verz. Dubl. Berliner Mus., p. 28, 1823—São Paulo.

Antilophia galeata Reiser, pp. 76, 166—Santa Philomena, Piauhý.

A female obtained by the Vienna Academy Expedition on July 17, 1903, at Santa Philomena is the only record of this beautiful Manakin from Piauhý. I found it to be similar to examples from Matto Grosso and São Paulo.

A. galeata is an endemic species of the central plateau region of Brazil, ranging from northern São Paulo and western Minas Geraes north to southern Piauhý and Maranhão,² west to Matto Grosso.]

182. *Chiroxiphia pareola pareola* (Linnaeus).

Pipra pareola Linnaeus, Syst. Nat., 12th ed., 1, p. 339, 1766—based on Brisson, Edwards, and Marcgrave, "Brasília et Cayana."

Chiroxiphia pareola Reiser, pp. 100, 166—Miritiba, Maranhão.

Maranhão: Tury-assú, ♂ ad., ♂ juv., two ♀ ♀ ad., Oct. 9, 23, Nov. 3, 20, 1923; Anil, near São Luiz, ♀ ad., July 25, 1923; Rosario, ♂ ad., ♂ imm., May 5, 24, 1924.

Additional specimens.—Maranhão: Miritiba 8. F. Schwanda.

¹The type was presented by the Swedish Consul General Westin, of Rio de Janeiro, and as most of the species described by Thunberg are natives of eastern Brazil, there seems hardly any doubt that *P. cephalaeus* was based on a young male of the form named *P. pipra bahiae* by Ridgway.

²Although H. Snethlage (Journ. Orn., 75, pp. 468, 478, 1927) lately recorded this species from Ponto and Inhuma, no specimens are to be found in his collection.

This Manakin ranges from the Guianas through Lower Amazonia (west to Obidos and the Tapajóz) and the eastern states of Brazil south to Espirito Santo.

183. *Manacus manacus purus* Bangs.¹

Manacus manacus purus Bangs, Proc. New Eng. Zool. Cl., 1, p. 36, 1899—Santarém, Rio Tapajóz, Brazil; Reiser (2), p. 166—Miritiba, Maranhão.

Chiromachaeris gutturosus (not *Pipra gutturosa* Desmarest) Ihering, Cat. Faun. Braz., 1, p. 302, 1907—part, Maiobá, Maranhão.

Manacus manacus (not of Linnaeus) Reiser (1), p. 100—Miritiba.

Maranhão: Tury-assú, ♂ ad., ♂ juv., two ♀ ♀ ad., Oct. 8, 9, 30, Nov. 21, 1923; Rosario, ♂ imm., ♂ juv., ♀ ad., April 30, May 5, 20, 1924.

Additional specimens.—Maranhão: Miritiba, six ♂♂ ad., one ♀ ad., June 5, 23, Aug. 15, 16, Sept. 22, Nov. 10, 1907, Feb. 10, 1908. F. Schwanda (Munich and Vienna Museums).

The males are identical with others from Pará.

M. m. purus is a Lower-Amazonian form, ranging from the Tapajóz through the state of Pará (south of the Amazon) into the forest belt of northern Maranhão, at least as far east as Miritiba.

No *Manacus* has been recorded from east of Maranhão and north of Bahia, though a very strongly marked form with dark gray belly (*M. m. gutturosus*) reappears in southeastern Brazil, from the vicinity of Bahia City (Santo Amaro) south to Paraná, and Misiones.

184. *Neopelma pallescens* (Lafresnaye).

Tyrannula pallescens Lafresnaye, Rev. Mag. Zool., (2), 5, p. 57, 1853—Bahia.

Scotothorus pallescens Reiser, pp. 76, 166—Cachoeira, Rio Parnahyba, Maranhão and São Martin, Rio Parnahyba, Piahy.

Maranhão: Rosario, ♀ ad., April 29, 1924; Tranqueira, three ♂♂ ad., Sept. 10, 11, 16, 1925.—“Iris grayish yellow, feet pale gray, bill black, base of mandible pale gray.”

Additional specimens.—Maranhão: Miritiba, ♀ ad., Dec. 4, 1907. F. Schwanda (Munich Museum); Cachoeira, Rio Parnahyba, ♀ imm., July 23, 1903. O. Reiser (Vienna Museum).—Piahy: Ilha São Martin, lower Parnahyba, ♂ ad., ♀ juv., Aug. 23, 1903. O. Reiser (Vienna Museum).

¹Mr. Todd (Proc. Biol. Soc. Wash., 41, p. 111, 1928) has recently discovered that birds from Pará and east were not the same as *M. m. purus*, described from Santarém, Rio Tapajóz, and named them *M. m. purissimus*.

Agreeing with specimens from Bahia (Santo Amaro), Minas Geraes (Rio das Velhas, near Lagôa Santa), and Matto Grosso (Chapada).

An endemic species of the central-Brazilian fauna, ranging from northern São Paulo and western Minas Geraes north to the coast of Maranhão and even to the lower Amazon, west to Matto Grosso and east to Bahia City.

[185. *Schiffornis turdinus wallacii* (Sclater and Salvin).

Heteropelma wallacii Sclater and Salvin, P. Z. S. Lond., 1867, p. 579—Pará.

Scotothorus wallacii Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—Tury-assú, Maranhão.

Madame Snethlage obtained at Tury-assú a single example of this Lower-Amazonian Manakin which extends north into French and Dutch Guiana and appears to reach the eastern limit of its range in the forested parts of northern Maranhão.]

[186. *Tityra cayana braziliensis* (Swainson).

Psaris braziliensis Swainson, Anim. Menag., p. 286, Dec., 1837—northern Brazil (type in Cambridge Museum, England, examined).

Pachyrhynchus cajanus (not *Lanius cayanus* Linnaeus) Spix, Av. Bras., 2, p. 32, 1825—part, female, Piahy (spec. in Munich Museum examined).

Tityra brasiliensis Reiser, pp. 70, 152—Burity to Pé do Morro Trail, Santa Maria, and Santa Philomena, Piahy.

Piahy: Santa Philomena, ♂ ad., July 14, 1903; Burity, near Parnaguá, ♂ ad., June 23, 1903; Santa Maria, ♀ ad., July 5, 1903. O. Reiser (Vienna Museum).

While the males are not appreciably different from south-Brazilian examples; the female, by nearly pure gray ground-color of the upper, and pure white tone of the under parts, points somewhat to *T. c. cayana*. Swainson's female type in the Cambridge (Eng.) Museum is similar. In females from Bahia and southward, the upper parts are decidedly brownish, and the ventral surface is more or less suffused with buff.

T. cayana braziliensis, widely distributed in central and eastern Brazil, evidently reaches the northern limit of its range in the interior of Piahy. Specimens from the Pará region (whence a series of sixteen, including the type of *Tityra intermedia* Cabanis and Heine,¹ has been examined) are inseparable from the northern *T.*

¹Mus. Hein., 2, p. 81, 1859—Pará.

c. cayana. The interesting interrelations of *cayana* and *braziliensis* will be discussed elsewhere.]

[187. *Tityra inquisitor inquisitor* (Lichtenstein).

Lanius inquisitor Lichtenstein, Verz. Dubl. Berliner Mus., p. 50, 1823—São Paulo.

Tityra inquisitor erythrogeus (not of Selby) Reiser, pp. 70, 153—Burity, near Parnaguá, Piauhý.

Piauhý: Burity, near Parnaguá, ♂ ad., ♀ ad., June 14, 1903. O. Reiser (Vienna Museum).

Mr. Reiser, probably influenced by the alleged type locality (Pernambuco), referred the two specimens from Burity to *T. i. erythrogeus*; but their careful comparison with a large series from Guiana, Venezuela, and various parts of Brazil clearly shows this view to be fallacious.

The Burity female agrees with others from São Paulo (Cubatão), and Minas Geraes (Agua Suja, near Bagagem) in all essential points, viz., decidedly brownish back, grayish buffy breast, and black tail, with only the extreme base white and without trace of a white apical margin. It differs, however, by deeper rufous frontal band and sides of head, and by having numerous narrow streaks of dusky on the breast; divergencies which require confirmation by additional specimens.

The male is exactly like others from Bahia.

The type of *Psaris erythrogeus* Selby,¹ which I have most carefully reexamined at Paris, is certainly different from the females occurring in Bahia and Piauhý, being much smaller, light gray on the back (without any brownish tinge), and shaded with pale grayish (not buffy) across the breast. In fact, as pointed out elsewhere,² it is identical with birds from Guiana and Venezuela to which, therefore, Selby's name should be applied. The specimen which was obtained in exchange from Verreaux in 1823, though stated to be from Pernambuco, is much more likely to have originated from French Guiana, since it agrees particularly well, even in size, with a female from near Paramaribo in the Tring Museum. Moreover, north-eastern Brazil is now known to be tenanted by other forms.

T. i. inquisitor, in typical form, inhabits southern Brazil, from Espirito Santo and Minas Geraes south to Santa Catharina and

¹Zool. Journ., 2, No. 8, p. 483, 1826—"Pernambuco" (type in Paris Museum).

²Nov. Zool., 13, pp. 327-328, 1906.

Misiones. *Psaris natterii* (sic) Swainson¹ is strictly synonymous with this large southern bird, as I have ascertained by examination of the type in the Cambridge (Eng.) Museum, and *Psaris jardinii* Swainson,² based on a male in first annual plumage, without spurious (second) primary, obviously also belongs here.

Birds from Bahia and Piauhý are on average smaller and, if deemed worthy of subspecific separation, would have to be called *T. inquisitor selbii* (Swainson).³ The type in the Cambridge (Eng.) Museum, which thanks to the courtesy of Dr. Hans Gadow I have been enabled to examine, proves to be an exact duplicate of a male from Macaco Secco, near Andarahy, Bahia, in Field Museum. The types of *Exetastes albinuchus* Cabanis and Heine,⁴ lately compared in the Heine Collection at Halberstadt, belong to the same short-winged variety.

MEASUREMENTS

Adult males	Wing	Tail
Misiones (three)	108, 108, 115	67, 70, 70
São Paulo (seven)	107, 111, 111, 112, 113, 114, 115	68, 68, 69, 70, 70, 71, 73
Type of <i>Psaris natterii</i> Sw.	115	73
Minas Geraes (five)	110, 112, 114, 115, 115	—, 68, 71, 71, 72
Bahia (one trade skin)	109	66
Macaco Secco, near Andarahy, Bahia (one)	102	68
Type of <i>Psaris selbii</i> Sw.	103	65
Types of <i>Exetastes albinuchus</i> Cab. & H.	107, 108	65, 67
Burity, Piauhý (one)	106	68
Adult females		
São Paulo (two)	106, 106	67, 68
Minas Geraes (two)	107, 108	67, 67
Bahia (three)	103, 104, 107	68, 68, 70
Burity, Piauhý (one)	102	66]

188. *Tityra inquisitor pelzelni* Salvin and Godman (subsp.?).

Tityra pelzelni Salvin and Godman, Biol. Centr.-Amer., Aves, 2, p. 120, Dec., 1890—[Villa Bella de] Matto Grosso, Brazil (type examined).

Tityra inquisitor erythrogenys (not of Selby) Hellmayr, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 32, 1912—Santo Antonio do Prata, Pará.

Maranhão: Mangunça Island, ♂ ad., March 11, 1924.—Wing 103; tail 63; bill 22.

¹Anim. Menag., p. 286, Dec., 1837—southern (?) Brazil.

²Zool. Illust., 2nd ser., 1, pl. 35, 1830—"interior of Brazil."

³*Psaris selbii* Swainson, Anim. Menag., p. 286, Dec., 1837—"southern Brazil."

⁴Mus. Hein., 2, p. 83, 1859—Brazil.

This bird is exactly intermediate between *T. i. inquisitor* and *T. i. albitorques*, combining the black cheeks and auriculars of the former with the tail markings of the latter. In the American Museum of Natural History, New York, there is a similar specimen secured by Geo. K. Cherrie at Santarém, Rio Tapajóz, on April 19, 1915 (A. M. N. H., No. 148699), which differs only by having the upper portion of the auriculars suffused with grayish white. The two examples come very near to *T. i. pelzelni* Salvin and Godman, of Matto Grosso, but the white basal zone of the tail is even more extensive. A female from Santarém (A. M. N. H., No. 148698) has quite as much white at the base as the males and the white apical margin still wider, while one from Peixe-Boi, near Pará (Munich Museum, No. 10.1095), resembles *T. i. inquisitor* in coloration of tail, except for possessing narrow white edges at the tip of the rectrices. More material is required to determine whether the form ranging from the Tapajóz to northern Maranhão is really separable from *T. i. pelzelni*.

189. *Platypsaris rufus rufus* (Vieillot).

Tityra rufa Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 3, p. 347, 1816—based on Azara, No. 208, Paraguay (= female).

Hadrostomus atricapillus Reiser, pp. 70, 153—Pedrinha, Lake Parnaguá, Piauhý.

Piauhý: Ibiapaba, three ♂♂ ad., two ♀♀ ad., Dec. 17, 18, 20, 1924, Jan. 3, 15, 1925; Deserto, ♂ ad., two ♀♀ ad., March 28, 1925.—Wing (male) 96, 97, 99, 100, (female) 93, 93, 95, 96; tail (male) 66, 70, 72, 73, (female) 66, 67, 68, 71.

Additional specimen.—Ceará: Juá, near Iguatú, ♂ ad., Aug. 1, 1913. R. H. Becker.

Compared with twenty skins from eastern Brazil (Bahia to Paraná) the males do not appreciably differ, but the females are decidedly smaller¹ and on average paler rufous above. No material is available from Paraguay.

P. r. rufus is another representative of the Brazilian table-land, ranging from Santa Catharina, Paraguay, and adjacent districts of northeastern Argentina north to Matto Grosso, Goyaz, Piauhý, and Ceará.

[190. *Platypsaris minor* (Lesson).

Querula minor Lesson, Traité d'Orn., livr. 5, p. 363, end of 1830—Cayenne.

¹Seven females from Bahia, São Paulo, and Paraná show the following measurements: wing 97, 98, 98, 99, 100, 100, 106; tail 68, 68, 70, 70, 72, 73, 77 mm.

Platyptaris minor Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—Tury-assú, Maranhão.

The taking of a specimen at Tury-assú by Madame Snethlage extends the range of the Lesser Becard, widely distributed in the Guianas and Amazonia, from Pará to northern Maranhão.]

191. *Pachyramphus viridis cuvierii* (Swainson).

Psaris cuvierii Swainson, Zool. Illust., 1, pl. 32, March, 1821—Brazil.

Piauhy: Ibiapaba, ♂ ad., Jan. 3, 1925.

Additional specimens.—Ceará: Baturité, ♀ ad., Nov., 1896, J. Bach (Tring Museum); Juá, near Iguatú, ♂ ad., ♂ juv., Aug. 20, 1913. R. H. Becker.

The single bird sent by Dr. Snethlage being very nearly as large as specimens from southern Brazil, the validity of the race *cuvierii* becomes again questionable. In any case, it will be extremely hard to distinguish two forms based on size alone, as may be seen from the following wing measurements.

♂ ♂ ad.,—San Vicente, Chaco, Santa Fé, Argentina, 81; Lambaré, Paraguay, 77; Curityba, Paraná, 78; Cuyabá, Matto Grosso (two), 71, 74; Engenho do Cap. Gama, Matto Grosso, 76; Sangrador Matto Grosso, 76; Victoria, São Paulo, 75; Iguapé, São Paulo, 76; Rio de Janeiro, 76; Santo Amaro, Bahia, 77; Bahia (five trade skins), 70, 70, 71, 75, 75; Juá, Ceará, 73; Ibiapaba, Piauhy, 78.

♀ ♀ ad.—Ocampo, Santa Fé, Argentina, 79; Roça Nova, Serra do Mar, Paraná (two), 75, 78; Cuyabá, Matto Grosso, 76; Ipanemá, São Paulo, 75; Rio de Janeiro, 74; Santo Amaro, Bahia, 71; Bahia (three trade skins), 70, 71, 71; Baturité, Ceará, 75.

A good series from Paraguay is required to decide the fate of the alleged northern subspecies.

P. viridis cuvierii is a representative of the table-land fauna, and its range certainly does not extend beyond the arid section of the northern states.

[192. *Pachyramphus polychopterus niger* (Spix).

Pachyrhynchus niger Spix, Av. Bras., 2, p. 33, pl. 45. fig. 1, 1825—no locality stated; Fonte Boa, Rio Solimões suggested by Berlepsch and Hartert (Nov. Zool., 9, p. 56, 1902); Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 63, 1926—São Bento and Tury-assú, Maranhão.

According to Madame Snethlage, three males taken on the coast are referable to *P. p. niger* which, like so many other Guianan and

Amazonian representatives, thus extends into the forested districts of northern Maranhão. Possibly a young male (in the garb of the female) secured by Dr. Snethlage at Rosario, on May 8, 1924, belongs likewise here, but without knowledge of the adult male it is impossible to decide for certain.]

193. *Pachyramphus polychopterus polychopterus* (Vieillot).

Platyrhynchus polychopterus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 27, p. 10, 1818—"la Nouvelle Hollande," errore (type in Paris Museum examined).

Pachyramphus polychropterus Reiser (1), p. 70, 1910—Lagôa do Purgatorio and Parnaguá, Piauhý.

Pachyrhynchus polychropterus Reiser (2), p. 154, 1925—same localities.

Maranhão: Barra do Corda, ♂ juv., Aug. 12, 1924.

Piauhý: Ibiapaba, ♂ ad., Jan. 16, 1925.—Wing 76; tail 59.

Additional specimens.—Piauhý: Lagôa do Purgatorio, ♀ ad.; Parnaguá, two ♀ ♀ ad., May, 1903. O. Reiser (Vienna Museum).

The adult male agrees with others from Bahia in Field Museum, one of which had been compared and found identical with the type of *P. polychopterus*, erroneously ascribed to Australia, in the Muséum d'Histoire Naturelle, at Paris.

P. p. polychopterus appears to be restricted to northeastern Brazil, from Bahia north to Ceará, Piauhý, and central Maranhão.

In southeastern Brazil (north to Rio de Janeiro), Uruguay, Paraguay, and northern Argentina, it is replaced by a larger form, with darker under parts in the male sex. Bangs and Penard, in their latest note¹ on the subject, called it *P. polychopterus notius* Brewst. and Bangs,² but I have discovered an earlier name in *Pachyrhynchus spixii* Swainson.³ The type, kindly sent by Dr. H. Gadow from the Cambridge (Eng.) Museum, is an adult male (with spurious second primary) and still bears Swainson's label with the inscription "*Pachyrh. spixii* Male. Brazil ?."⁴ It agrees in size and color with males from

¹Proc. Biol. Soc. Wash., 35, p. 225, 1922.

²Proc. New Engl. Zool. Cl., 2, p. 53, 1901—Concepción del Uruguay, Entre Rios.

³Anim. Menag., p. 289, Dec., 1837—"Brazil?"; we suggest Rio de Janeiro as type locality.

⁴A mounted specimen (No. 3625. ♂. Brésil. Ménétriers) of *P. marginatus* in the Paris Museum is erroneously marked as "*P. spixii* Sw., type." It entirely disagrees with Swainson's description, having the upper back gray like the rump, whereas the original diagnosis reads "above black, with the rump and tail coverts cinereous," and having also a distinct white streak across forehead and lores, not mentioned by Swainson.

Rio de Janeiro, Alex. Fry coll., in the British Museum, which, together with those from São Paulo, Paraná, and Minas Geraes, I am unable to separate from Uruguayan and Argentine birds. The southern form must, therefore, stand as *P. polychopterus spixii* (Swainson), with Rio de Janeiro as type locality.

MEASUREMENTS OF ADULT MALES

<i>P. p. polychopterus</i>	Wing	Tail
Ibiapaba, Piahy (one)	76	59
Bahia (six)	75, 75.76, 77, 78, 78	56, 57, 58, 60, 60, 62
Type of <i>P. polychopterus</i>	75	57
<i>P. p. spixii</i>		
Rio de Janeiro (three)	80, 81, 82	62, 63, 63
Type of <i>P. spixii</i>	82	64
Agua Suja, Minas Geraes (two)	82, 83	64, 64
Sapucay, Paraguay (one)	83	63
Santa Florencia, Uruguay (one)	82	66
Buenos Aires (two)	82, 84	64, 65

194. *Pachyrhamphus marginatus nanus* Bangs and Penard.

Pachyrhamphus marginatus nanus Bangs and Penard, Bull. Mus. Comp. Zool., 64, p. 395, 1921—Xeberos, eastern Peru.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., Nov. 20, 1923.—Wing 68; tail 50.

Agrees in size with Amazonian specimens, of which a large series from Venezuela (Caura Valley) and northern Brazil (upper Rio Negro) has been compared. Their wing measurement ranges from 65 to 69, while a single male from northern Peru is still smaller (wing 64; tail 48).

Seven males from Bahia and Rio de Janeiro are markedly larger, the length of the wing varying from 70-76, that of the tail from 52 to 57 mm. They represent *P. m. marginatus* (Lichtenstein),¹ which is apparently restricted to the forested coast region of southeastern Brazil.

195. *Lathria cineracea cineracea* (Vieillot).

Ampelis cineracea Vieillot,² Tabl. Enc. Méth., Orn., 2, livr. 91, p. 761, 1822—based on "Le Cotinga cendré" Levaillant, Hist. Nat. Ois. Nouv. et Rares, 1, pl. 44, Cayenne.

¹*Todus marginatus* Lichtenstein, Verz. Dubl. Berliner Mus., p. 51, 1823—Bahia (type in Berlin Museum examined; = female).

²*Ampelis cinerea* Vieillot (Nouv. Dict. Hist. Nat., nouv. éd., 8, p. 162, 1817), universally used for the species, is invalidated by the earlier *Ampelis cinerea* Latham (Ind. Orn., 1, p. 367, 1790—based on *Lanius nengeta* var. β , Gmelin, Syst. Nat., 1, (1), p. 299, 1788), a probable synonym of *Xipholena punicea* (Pallas).

Maranhão: Tury-assú, ♂ ad., Oct. 24, 1923.—Wing 122; tail 110.

This bird is similar, in coloration and size, to specimens from Guiana and Lower Amazonia. Five (unsexed) Bahia skins do not appear to be separable either. Two have a slight rufescent tinge on the tips of the rectrices and inner secondaries, which possibly indicates an approach to the large south-Brazilian *L. cineracea lanioides* (Lesson).¹ The three others being, however, absolutely indistinguishable from northern examples, I do not think there is sufficient evidence to warrant the recognition of an intermediate Bahian race, *L. cineracea vociferans* (Wied).²

On the other hand, eight specimens from Río San Mateo, Bolivia, and one from Sarayacu, eastern Ecuador are larger and generally slightly more olivaceous above. They may be separable, although it should be noted that the differences are hardly apparent in two skins from northern Peru (Moyobamba, Rioja) in Field Museum.

MEASUREMENTS

Adult males	Wing	Tail
Ipousin, French Guiana (five)	121, 122, 124, 126, 127	109, 110, 112, 113, —
Near Paramaribo, Surinam (one)	124	111
Mazaruni River, Br Guiana (one)	122	113
Serra Grande, Rio Branco, Brazil (seven)	120, 120, 122, 122, 122, 123, 125	108, 108, 108, 110, 110, 112, 117
Igarapé-assú, Pará (four)	116, 117, 119, 120	105, 107, 108, 110
Tury-assú, Maranhão (one)	122	110
Moyobamba, Peru (one)	128	117
San Mateo, Bolivia (six)	128, 128, 131, 132, 133, 133	116, 117, 117, 117, 119, 122
Adult females		
Approuague, Fr Guiana (one)	116	109
Near Paramaribo, Surinam (one)	120	110
Mazaruni River, Br Guiana (one)	119	105
Conceição, Rio Branco (one)	120	100
Utinga, Pará (one)	113	105
Rioja, Peru (one)	120	114
San Mateo, Bolivia (two)	128, 128	112, 116
Bahia (five unsexed adults)	118, 119, 121, 122, 125	110, 111, 111, 114, 117

196. *Lipaugus simplex frederici* Bangs and Penard.

Lipaugus simplex frederici Bangs and Penard, Bull. Mus. Comp. Zool., 62, p. 71, 1918—vicinity of Paramaribo, Surinam.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., Nov. 19, 1923.

¹See Verhandl. Orn. Ges. Bay., 12, p. 138, 1915.

²*Muscicapa vociferans* Wied, Reise Bras., 1, p. 242 (8vo ed., p. 240), 1820—near Pindoba, north of Caravellas, Bahia.—Syn. *Muscicapa plumbea* Lichtenstein, Verz. Dubl. Berliner Mus., p. 53, 1823—Bahia.

Agreeing with specimens from Guiana and Amazonia. The typical form *L. s. simplex*, of southeastern Brazil (Bahia to Rio de Janeiro), is more olivaceous throughout. Single examples of the two races are not always distinguishable.

197. *Attila thamnophiloides thamnophiloides* (Spix).

Muscicapa thamnophiloides Spix, Av. Bras., 2, p. 19, pl. 26, fig. 2, 1825—Amazon River (type in Munich Museum examined).

Maranhão: Tury-assú, ♀ ad., Nov. 3, 1923.—Wing 92; tail 84.

An Amazonian species, ranging north to the Guianas and east into the heavily forested districts of northern Maranhão.

Birds from eastern Peru, by paler rump and posterior under parts, somewhat diverge in the direction of the still lighter-colored, larger *Attila thamnophiloides torridus* Scl., of western Ecuador.

198. *Casiornis rufa* (Vieillot).

Thamnophilus rufus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 3, p. 316, 1816—based on Azara's "Batara roxo," No. 218 (No. 217, in Walckenaer-Sonnini's French edition), Paraguay.

Maranhão: Barra do Corda, ♂ ad., two ♀ ♀ ad., Sept. 17, 20, 1924.—Wing (male) 84, (female) 81, 83; tail 81, (female) 76, 79.

Agreeing with a large series from Matto Grosso and São Paulo (Baurú). Birds from Bolivia (Santa Cruz, Buenavista) and Jujuy average slightly larger.

The occurrence of this bird at Barra do Corda, in the heart of the range of *C. fusca*, clearly demonstrates its specific distinctness.

C. rufa is an endemic species of the central-Brazilian plateau. Its range extends from northern São Paulo and western Minas Geraes north through Goyaz to Maranhão and even Monte Alegre, on the north bank of the lower Amazon,¹ and west through Matto Grosso and northern Paraguay to northern Argentina and Bolivia.

199. *Casiornis fusca* Sclater and Salvin.

Casiornis fusca Sclater and Salvin, Nomencl. Av. Neotrop., pp. 57, 159, 1873—Bahia; Reiser, pp. 70, 154—Lake Missão, near Parnaguá, and above Pintados, lower Parnahyba, Piahy.

Maranhão: São Bento, ♀ ad., Sept. 11, 1923; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 17, 1925.

¹See Snethlage, Bol. Mus. Goeldi, 8, p. 354, 1914.

Piauhý: Ibiapaba, two ♂♂ ad., ♀ ad., Dec. 27, 1924, Jan. 2, 10, 1925.

Additional specimens.—Maranhão: São Luiz, one (unsexed) adult, July 17, 1905 (Sophia Museum); Miritiba, ♂ ♀ ad., F. Schwanda (Munich Museum).—Ceará: Juá, near Iguatú, four ♂♂, four ♀♀, July, August, 1913. R. H. Becker.

Some of the above specimens have been compared and found identical with the type from Bahia in the British Museum.

C. fusca chiefly differs from its ally by paler and less buffy under parts, the abdomen being massicot or naphthalene yellow instead of cream color to Naples yellow, while throat, chest, and sides are between avellaneous and wood brown instead of being pale ochraceous tawny. Besides, the back is dull earthy brown, sometimes slightly tinged with cinnameous, and contrasts strongly with the tawny pileum and rump, whereas in *C. rufa* the whole dorsal surface is nearly uniform deep tawny.

C. fusca ranges over northeastern Brazil, south to Bahia, and stretches along the south bank of the lower Amazon west to the Tapajóz.

[200. *Xipholena lamellipennis* (Lafresnaye).

Ampelis lamellipennis Lafresnaye, Mag. Zool., (2), 1, cl. 2, pl. 9, 1839—"l'Amérique du Sud" = Pará.

Xipholena lamellipennis Reiser, pp. 100, 154—Miritiba, Maranhão.

The Vienna Museum has a couple of adults secured by the late Ferdinand Schwanda at Miritiba, Maranhão, on June 10, 1907.

A Lower-Amazonian species ranging from the Tapajóz to northern Maranhão. Represented in eastern Brazil, from Pernambuco to Espírito Santo, by *X. atropurpurea* (Wied), which is obviously specifically distinct.]

201. *Querula purpurata* (Müller).

Muscicapa purpurata P. L. S. Müller, Natursyst., Suppl., p. 169, 1776—based on Daubenton, Pl. Enl. 381, Cayenne.

Goyaz: Santo Antonio (Bôa Vista), ♀ ad., Jan. 28, 1926.

Identical with specimens from Pará and Guiana.

202. *Procnias averano averano* (Hermann).

Ampelis averano Hermann, Tab. Aff. Anim., pp. 211, 214, 1783—based on "L'Averano" Buffon, Hist. Nat. Ois., 4, p. 457, 1778, ex "Guirapunga" Marcgrave, Hist. Nat. Bras., p. 201, northeastern Brazil.

Ampelis variegata Gmelin, Syst. Nat., 1, (2), p. 841, 1789—based on the same.

Maranhão: Grajahú, ♂ ad., Oct. 30, 1924; Tranqueira, three ♂ ad., one ♀ ad., Sept. 8, 11, 16, 1925.—“Iris brown, feet black (male) or dark gray (female), bill black.”

♂♂—Wing 160, 165, 165, 166; tail 86, 88, 92, 93; bill 19-20.

♀ ad.—Wing 145; tail 90; bill 18.

These appear to be the first specimens of the Bell-bird of north-eastern Brazil ever taken since Marcgrave's time. The proper relationship of the “Guirapunga” was surrounded by considerable uncertainty owing to Marcgrave's description of the male having been based upon a bird changing from juvenile into adult plumage. While the earlier authors, like Salvin, Sclater, and others, associated his account with the brown-headed, black-winged species of the Caribbean mountain ranges, the writer of the present paper expressed the belief¹ that it was more likely to be referable to the naked-throated *P. nudicollis* (Vieillot), known to range over south-eastern Brazil from Minas Geraes and southern Bahia to Rio Grande do Sul. The material now forwarded by Dr. Snethlage, however, reveals the surprising fact that the Bell-bird of Maranhão is indeed closely related to the species found in northern Venezuela and Trinidad,² and Marcgrave's account,³ although no definite locality is specified, leaves no doubt whatever that his “Guirapunga” refers to the same bird.

The adult males have the back, tail and under parts, excepting the denuded caruncled throat, pure white; the upper part of the head and the auriculars of a rich brown, between cinnamon brown and “Prout's brown”; the wings, including the upper and lower coverts, deep black.

Birds from Trinidad and northern Venezuela, while identical in general style and shape of gular appendages, nevertheless differ by having pale grayish (pale gull gray to pallid neutral gray) coloration and must stand as *Procnias averano carnobarba* (Cuvier).⁴

¹See Nov. Zool., 27, p. 329 last footnote, 1920.

²Universally known as *P. variegata*, but more properly called *P. averano carnobarba* (Cuvier).

³See the passage “Sub gutture autem, quod latum habet, et in collo inferiore, multas digitum longas propendentes particulas carneas nigras habet, figure spiculi hastae, vel quasi ligulae,” which exactly fits the brown-headed species.

⁴*Ampelis carnobarba* Cuvier, Règne Anim., 4, p. 172, pl. 4, fig. 4, 1817—no locality stated; the type in the Paris Museum is from Trinidad, coll. Robin.

203. *Furnarius leucopus assimilis* Cabanis and Heine.

Furnarius assimilis Cabanis and Heine, Mus. Hein., 2, p. 22, 1859—Brazil = Bahia; Reiser, pp. 70, 152—Pedrinha, Lake Parnaguá, Therezina, Piauhý.

Furnarius leucopus cearae Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 339, 1916—Quixada, Ceará.

Maranhão: Codó, Cocos, ♂ ad., two ♀ ♀ ad., June 21, 23, 27, 1924.

Piauhý: Ibiapaba, five ♀ ♀ ad., Dec. 23, 26, 1924, Jan. 2, 9, 12, 1925; Arára, ♂ ad., Jan. 31, 1925; Deserto, ♂ ad., ♀ ad., March 31, 1925.

Additional specimens.—Maranhão: Miritiba, ♂ ad., June 5, 1907. F. Schwanda (Munich Museum).—Piauhý: Pedrinha, Lake Parnaguá, ♂ ad., ♀ ad., May 21, 1903; Therezina, ♂ ad., Aug. 18, 1903. O. Reiser (Vienna Museum).—Ceará: Quixada, ♂ ad., June 27, 1913 (type of *F. leucopus cearae*); Serra de Baturité, ♀ ad., ♀ juv., July 19, 21, 1913. R. H. Becker.

The series agrees with specimens from Bahia. Two of the Cocos birds have the pileum darker, almost blackish brown, like two others from near Leopoldina, Rio Araguaya, Goyaz.

The Pale-legged Oven-bird ranges from Bahia and Ceará all over the table-land of central Brazil to the Bolivian boundary.

204. *Furnarius figulus figulus* (Lichtenstein).

Turdus figulus Lichtenstein, Verz. Dubl. Berliner Mus., p. 40, 1823—Bahia.

Maranhão: São Francisco (opposite Amarante), Rio Parnahyba, ♂ imm., July 1, 1925.

Piauhý: Ibiapaba, ♂ ad., ♀ ad., Dec. 26, 1924, Jan. 3, 1925; Deserto ♂ ad., March 30, 1925.—“Iris brown, feet dark gray, bill black, base of mandible pale gray.”

Additional specimen.—Ceará: Juá, near Iguatú, ♂ ad., Aug. 2, 1913. R. H. Becker.

The adults agree with others from Bahia. The immature male is smaller, with a shorter bill, and has the superciliaries as well as the breast and sides much darker (between warm buff and ochraceous buff), while the feathers of the pileum are margined with dusky.

The Twice-banded Oven-bird is confined to northeastern Brazil, ranging from Bahia north to Ceará and west to Maranhão. A nearly

allied form, *F. figulus pileatus* Scl. and Salv., is found on the lower Amazon and Araguaya.

205. *Synallaxis frontalis frontalis* Pelzeln.

Synallaxis frontalis Pelzeln, Sitzungsber. Math.-naturw. Kl. Ak. Wiss. Wien, 34, p. 117, 1859—based on *Parulus ruficeps* "female" of Spix (not *Sphenura ruficeps* Lichtenstein) Av. Bras., 1, p. 85, pl. 86, fig. 2, 1824—Rio São Francisco, Bahia, Brazil.

Synallaxis frontalis juae Cory, Auk, 36, p. 274, 1919—Juá, near Iguatú, Ceará.

Maranhão: Grajahú, three ♂♂ ad., Oct. 22, 23, 24, 1924; Barra do Corda, ♂ ad., ♀ ad., ♀ juv., Aug. 13, 19, Sept. 16, 1924; São Francisco, ♀ ad. (in annual molt), July 2, 1925; Tranqueira, ♂ ad., ♀ juv., Aug. 26, 27, 1925.

Piahy: Ibiapaba, two ♂♂ ad., Dec. 23, 30, 1924.

Ceará: Varzea Formosa, two ♂♂ ad., ♀ juv., Feb. 28, March 4, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, two ♂♂ ad., Aug. 12, Sept. 2, 1913; Serra de Baturité, ♂ ♀ ad., July 14, 16, 1913. R. H. Becker.

The series tends to show that *S. frontalis juae* was based on a rather uncommon individual variant of Pelzeln's Spine-tail, for only one of the adults from Varzea Formosa resembles the type in the reduction of the grayish frontal edge, the strong cinnamon rufous suffusion of the back, the wholly rufous tertials, and the buffy brown flanks. Four more specimens (Serra de Baturité 2, Ibiapaba 1, São Francisco 1) have slight cinnamon rufous edges to some of the interscapulars, while the majority, including two from Ceará, are absolutely indistinguishable from a series collected by R. H. Becker at Macaco Secco, near Andarahy, Bahia, which we may safely regard as typically representing *S. f. frontalis*.

Under these circumstances I see no practical advantage in recognizing a Ceará form, although it must be admitted that specimens like the type of *S. f. juae* have not yet been found outside of the boundaries of that state.

S. f. frontalis is widely diffused in the Brazilian campo region, from Maranhão and Ceará south to northern São Paulo and Minas Geraes.

206. *Synallaxis albescens albescens* Temminck.

Synallaxis albescens Temminck, Nouv. Rec. Pl. Col., livr. 38, pl. 227, fig. 2, Sept., 1823—Brazil=Cimenterio do Lambari, São Paulo; Reiser, pp. 69, 149—Santo Antonio de Gilboez and Santa Philomena, Piahy.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Dec. 6, 1923, Jan. 4, 1924; Codó, Cocos, ♂ ad., June 18, 1924.

Piauhy: Ibiapaba, ♀ ad., Jan. 16, 1925.

Goyaz: Certeza, ♂ ad., Sept. 26, 1925.

Additional specimens.—Piauhy: Santo Antonio de Gilboez, ♂ ad., July 2, 1903; Santa Philomena, ♂ ad., July 11, 1903. O. Reiser (Vienna Museum).

These examples show all the characters of the typical (southern) form and agree with a series from Pernambuco, Bahia, Minas Geraes and São Paulo. The northern limit of its range cannot accurately be stated. While Tury-assú in Maranhão is the most northerly locality known to me, it is quite possible that its distributional area includes the islands in the delta of the Amazon. The only available specimen (a young bird from Santa Maria, Mexiana) does not furnish satisfactory evidence for final conclusion.

207. *Synallaxis gujanensis gujanensis* (Gmelin).

Motacilla gujanensis Gmelin, Syst. Nat., 1, (2), p. 988, 1789—based on "Le Rouge-queue, de Cayenne" Daubenton, Pl. Enl. 686, fig. 2.

Maranhão: Tury-assú, ♂ imm., Oct. 16, 1923; São Bento, ♂ ad., ♂ imm., Sept. 7, 10, 1923.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Feb. 3, 1926.

Like one from near Pará, these examples are paler and less brownish below, with the middle of the abdomen extensively light buff, when compared with others from British Guiana, and may prove to be separable.

An Amazonian species, distributed in eight or more races all over the great forest region from the Guianas and the Orinoco south to the sources of the Paraguay and Araguaya Rivers.

208. *Synallaxis scutata scutata* Sclater.

Synallaxis scutata Sclater, P. Z. S. Lond., 27, p. 191, 1859—Brazil (the type examined in the British Museum is from Bahia); Reiser, pp. 69, 150—Parnaguá, Piauhy.

Synallaxis scutata neglecta Cory, Auk, 36, p. 275, 1919—Juá, near Iguatú, Ceará.

Maranhão: Barra do Corda, ♂ ad., Aug. 18, 1924.

Piauhy: Arára, ♂ ad., ♀ ad., Feb. 13, 1925; Deserto, ♂ ad., April 3, 1925.

Ceará: Varzea Formosa, ♀ ad., Feb. 25, 1925.

Additional specimens.—Piauhý: Parnaguá, ♂ ad., June 1, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., three ♀ ♀ ad., August 13, 18, 20, 28, 1913. R. H. Becker.

In comparing this series as well as numerous examples from other parts of Brazil, I find much individual variation in the intensity of coloration on the sides of the head, chest, and flanks. While the type of *S. s. neglecta* and the bird from Varzea Formosa have the chest paler (about cartridge buff) than any other specimen examined, two others from Juá are just as deeply warm buff below as the average from more southern localities. I do not see my way clear to recognize more than one form in eastern Brazil.

S. s. scutata inhabits the table-land of central Brazil, from Ceará, Piauhý, and central Maranhão south to Bahia, western Minas Geraes, northern São Paulo, and eastern Matto Grosso, where it gradually passes into the western *S. scutata whitei* Sclater.

209. *Synallaxis rutilans omissa* Hartert.

Synallaxis omissa Hartert, Bull. Brit. Orn. Cl., 11, p. 71, 1901—Pará.

Maranhão: Tury-assú, three ♀ ♀ ad., Oct. 27, Nov. 16, 23, 1923.

Agreeing with two topotypes from near Pará. All of the three specimens have the breast more or less tinged with dull cinnamon rufous.

This is a dark-colored race of the Amazonian *S. rutilans* group, which reaches the eastern limit of its distribution in the forest region of northern Maranhão.

210. *Certhiaxis cinnamomea cinnamomea* (Gmelin).

Certhia cinnamomea Gmelin, Syst. Nat., 1, (1), p. 480, 1788—based on "Cinamon Creeper" Latham, Gen. Syn. Birds, 1, (2), p. 740, 1782; Cayenne suggested as type locality (Berlepsch and Hartert, Nov. Zool., 9, p. 59, 1902).

Maranhão: Tury-assú, ♀ ad., Nov. 29, 1923.—Wing 59; tail 61; bill 13.

Careful reexamination leaves no doubt whatever that I made a serious mistake in referring¹ this specimen to the southern form *C. c. russeola*. Except for its very slightly darker upper parts it agrees exceedingly well with certain examples from British Guiana, notably in the bright buffy brown flanks and under tail coverts. It was the dusky inner web of the central rectrices, very rare in the northern

¹Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 4, p. 115, 1925.

rates, that accounts for my former misidentification, but I now consider this as an individual character rather than an approach to *C. c. russeola* which, as we shall see presently, is cut off from the range of *C. c. cinnamomea* by the intervening *C. c. cearensis*.

C. c. cinnamomea thus ranges from the Guianas and southern Venezuela through the eastern section of the state of Pará (Rio Jamundá; Ereré; Rio Tocantins; Mexiana and Marajó; Quati-purú) to the forested coast belt of northern Maranhão.

211. *Certhiaxis cinnamomea cearensis* (Cory).

Synallaxis cinnamomea cearensis Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 340, 1916—Juá, near Iguatú, Ceará.

Synallaxis martinsi Snethlage, Journ. Orn., 73, p. 268, 1925—Monduby, Ceará (= juv.).

Synallaxis cinnamomea Reiser, pp. 69, 150—Parnaguá and Santa Quiteria, Rio Parnahyba, Piahy (spec. examined).

Piahy: Ibiapaba, ♀ ad., Dec. 31, 1924.—Wing 61; tail 69; bill 13.

Additional specimens.—Ceará: Jua, near Iguatú, ♂ ad., ♂ juv., June 22, July 31, 1913. R. H. Becker.—Piahy: Parnaguá, ♀ ad., May 13, 1903; Santa Quiteria, ♀ ad., Sept. 4, 1903. O. Reiser (Vienna Museum).

The Ibiapaba specimen is perfectly similar to the type. Both have a distinct pale yellow chin spot, and the rump pale tawny olive in decided contrast to the cinnamon rufous of back and tail coverts, while flanks and crissum are but faintly shaded with light buff. The young bird which corresponds to the description of *S. martinsi* lacks the olivaceous uropygial area, has much deeper, almost ochraceous buff flanks, and the yellowish chin spot barely suggested.

On comparison with a fair series of *C. c. russeola* from Rio de Janeiro, Matto Grosso, and the Argentine Chaco (Ocampo, Prov. Santa Fé), the three specimens differ by much brighter, clear cinnamon rufous pileum and back, slightly smaller size, and somewhat more buffy, less grayish flanks and under tail coverts. I now consider *C. c. cearensis* a perfectly good race, although it was not recognized in the "Catalogue of Birds of the Americas." Specimens from Piahy (Parnaguá and Santa Quiteria), in the Vienna Museum, are similar to ours. Birds from Pernambuco and Bahia, while not quite so bright above, belong likewise to *C. c. cearensis*, and it would appear that the northward range of *C. c. russeola* does not extend much beyond Rio de Janeiro.

[212. *Cranioleuca vulpina reiseri* (Reichenberger).]

Siptornis vulpina reiseri Reichenberger, Anzeiger Orn. Ges. Bay., 6, p. 43, 1922—Riacho da Raiz, below União, Rio Parnahyba, Piauhy.

Synallaxis vulpina (not of Pelzeln) Reiser (1), p. 69, 1910—Parnaguá and Riacho da Raiz, Piauhy.

Synallaxis (*Siptornis*) *vulpina reiseri* Reiser (2), p. 151, 1925—same localities.

This well-characterized form is peculiar to the states of Bahia and Piauhy where it inhabits the banks of the São Francisco, Parnahyba, Gurgueira, and doubtless other rivers. It belongs to a group of Spine-tails distributed in a number of races throughout the Amazonian region. Dr. Snethlage did not meet with the species, but I have examined two specimens from Parnaguá and the type from Riacho da Raiz, Rio Parnahyba, Piauhy, besides some others from the Rio São Francisco (Barra) and Rio Preto in the Vienna Museum.]

213. *Cranioleuca semicinerea* (Reichenbach).

Leptoxyura semicinerea Reichenbach, Handb. Spez. Orn., Scansoriae, A. Sittinae, p. 170, pl. DXXI, fig. 3610, Aug., 1853—Brazil = Bahia.

Synallaxis semicinerea pallidiceps Cory, Auk, 36, p. 275, 1919—Serra de Baturité, Ceará.

Ceará: Serra de Baturité, ♂ ♀ ad., July 14, 16, 1913. R. H. Becker.

Another endemic species whose range is restricted to northeastern Brazil (Bahia to Ceará). In addition to our own two specimens from the Serra de Baturité, I have seen three others secured by Madame Snethlage in Ceará.

214. *Asthenes hellmayri* (Reiser).

Synallaxis griseiventris (not of Allen 1889) Reiser, Anzeiger Ak. Wiss. Wien, 42, p. 323, 1905—Fazenda da Serra, Rio Grande, Bahia.

Synallaxis hellmayri Reiser, Ornith. Monatsber., 13, p. 210, 1905—new name for *S. griseiventris* Reiser nec Allen.

Piauhy: Arára, ♂ ad., Feb. 4, 1925.—Wing 70; tail 87; bill 14. —“Iris orange red, feet dark gray, bill black.”

Somewhat darker and larger than an adult female from Bahia (Rio do Peixe, near Queimadas), but the variation is insignificant.

A very distinct species with no near ally. Reiser compares it with *S. “pudica”* and *S. omissa* from which it is, however, generically different.¹

¹See Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 4, p. 145, 1925.

A. hellmayri is known only from the states of Bahia (Barra; Fazenda da Serra and Serra do Estreito; Rio do Peixe, near Queimadas) and Piauí (Arára).

[215. *Phacellodomus rufifrons rufifrons* (Wied).

Anabates rufifrons Wied, Reise Bras., 2, p. 177, 1821—Rio Ressaque, Bahia.

Phacellodomus rufifrons Reiser, pp. 68, 149—Santo Antonio de Gilboez, Piauí.

Two young birds obtained by the Vienna Academy Expedition at Santo Antonio de Gilboez in July, 1903 are the only specimens from Piauí that I have seen.

P. r. rufifrons ranges from Bahia west to Minas Geraes and the extreme south of Piauí. In Pernambuco and Matto Grosso it is replaced by nearly allied races.]

[216. *Pseudoseisura cristata cristata* (Spix).

Anabates cristatus Spix, Av. Bras., 1, p. 83, pl. 84, 1824—Malhada, Rio São Francisco, Bahia.

Homorus cristatus Reiser (1), p. 68, 1910—Riacho da Raiz, below União, Rio Parnahyba, Piauí.

Pseudoseisura (*Homorus*) *cristata* Reiser (2), p. 148, 1925—same locality.

Piauí: Ibiapaba, ♂ ad., Jan. 3, 1925.—Wing 108; tail 103; bill 23.

Additional specimen.—Piauí: Riacho da Raiz, ♀ ad., Aug. 29, 1903. O. Reiser (Vienna Museum).

Agreeing with specimens from various parts of Bahia.

The Crested Cachalote is restricted in its range to eastern Brazil from Minas Geraes north to Piauí, while a smaller, darker race, *P. cristata unirufa*, takes its place in Matto Grosso and eastern Bolivia.

[217. *Automolus infuscatus paraensis* Hartert.

Automolus sclateri paraensis Hartert, Nov. Zool., 9, p. 61, note, 1912—part, male, "Bemavides" = Benevides, near Pará, Brazil (type examined).

Automolus infuscatus paraensis Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 64, 1926—Tury-assú, Maranhão.

Two specimens taken by Madame Snethlage at Tury-assú extend the range of this Lower-Amazonian form from Pará to northern Maranhão.]

[218. *Automolus rufipileatus rufipileatus* (Pelzeln).

Anabates rufipileatus Pelzeln, Sitzungsber. Math.-naturw. Kl. Ak. Wiss. Wien, 34, pp. 109, 131, 1859—Pará (type examined).

Philydor rufipileatus Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 64, 1926—Tury-assú, Maranhão.

Two examples secured by Madame Snethlage constitute the first record of the Chestnut-crowned *Automolus* for Maranhão. Heretofore, this form was known only from Amazonia (Pará to the Rio Purús).]

219. *Philydor ruficaudatus* (Lafresnaye and d'Orbigny).

Anabates ruficaudatus Lafresnaye and d'Orbigny, Syn. Av., 2, in Mag. Zool., 8, cl. 2, p. 15, 1838—Yuracares, Bolivia.

Maranhão: Tury-assú, Alto de Alegria, ♂ imm., Nov. 12, 1923.

An Amazonian species of wide distribution, extending its range into the forest region of northern Maranhão.

220. *Philydor erythrocerus lyra* Cherrie.

Philydor erythrocerus lyra Cherrie, Bull. Amer. Mus. Nat. Hist., 35, p. 186, 1916—Sixth of March Rapids, Rio Roosevelt, Matto Grosso.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., Nov. 16, 1923.

Like a series from Lower Amazonia, this bird has the upper parts more olivaceous than specimens from Matto Grosso and eastern Peru.

This is likewise an Amazonian species entering northern Maranhão from the west.

221. *Xenops minutus genibarbis* Illiger.

Xenops genibarbis Illiger, Prodr. Syst. Mamm. Av., p. 213, 1811—Cametá, Rio Tocantins.

Xenops genibarbis soror Hellmayr, Anzeiger Orn. Ges. Bay., 4, p. 31, March, 1921—Miritiba, Maranhão; Reiser (2), p. 147, 1925—São Martin, Rio Parnahyba, Piahy.

Xenops genibarbis littoralis (not of Sclater) Reiser (1), p. 68, 1910—São Martin, Rio Parnahyba, Piahy.

Maranhão: Tury-assú, ♂ imm., ♀ ad., Oct. 16, Nov. 14, 1923; São Luiz, ♂ ad., August 10, 1923.

Additional specimens.—Maranhão: Miritiba, two ♂♂, one ♀ ad., Aug. 22, Dec. 13, 1907. F. Schwanda (Munich Museum).—

Piauhý: São Martin, lower Parnahyba, ♂ imm., Aug. 23, 1903. O. Reiser (Vienna Museum).

A Lower-Amazonian form whose range extends through the forest country of northern Maranhão east to the lower Parnahyba, in Piauhý. In southeastern Brazil, from Bahia southward it is replaced by the smaller *X. m. minutus*, with more uniform under parts and paler wing band.

222. ***Xenops rutilus rutilus*** Lichtenstein.

Xenops rutilus Lichtenstein, Verz. Dubl. Berliner Mus., p. 17, 1823—Bahia; Reiser, pp. 68, 147—Lagôa Missão, Burity, and Pé do Morro, near Parnaguá, Piauhý.

Maranhão: Barra do Corda, ♂ ad., ♀ ad., Sept. 17, 22, 1924.—Wing 66, (female) 62; tail 51, (female) 47; bill 12, 11.

A characteristic species of the Brazilian table-land, reaching the northern limit of its range in central Maranhão.

223. ***Megaxenops parnaguæ*** Reiser.

Megaxenops parnaguæ Reiser, Anzeiger Ak. Wiss. Wien, 42, p. 322, 1905—Catinga woods on the trail from Parnaguá to Olho d'Água, Piauhý; idem (1), p. 68, 1910—same locality.

Megaxenops paranaguæ Reiser (2), p. 147, with col. plate, 1925—same locality.

Ceará: Varzea Formosa, ♀ ad., March 1, 1925.—“Iris brown, feet dark olive gray; bill dark gray, base of mandible paler.”

Upper parts, including tertials and tail, between tawny and hazel; quills dusky, exteriorly margined with the color of the back; forehead ochraceous buff; lores and rather indistinct superciliaries somewhat paler, warm buff; auriculars buff, deepening into ochraceous tawny on upper portion; throat, malar region, and cheeks silky white; remainder of the under parts ochraceous tawny, passing into tawny on under tail coverts; axillaries and under wing coverts ochraceous tawny, inner margin of remiges slightly duller. Wing 78; tail 66; bill 16.

This gigantic *Xenops* of peculiar coloration, a discovery of the Vienna Academy Expedition, is known only from the Catinga woods of southern Piauhý and western Ceará.

[224. ***Sclerurus scansor cearensis*** Snethlage.

Sclerurus caudacutus cearensis Snethlage, Journ. Orn., 72, p. 446, 1924—São Paulo, Serra de Ibiapaba, Ceará.

Having lately examined a cotype in the Berlin Museum, I can now positively assert that this form is a close relative of the well-known *S. s. scansor*, of southeastern Brazil. It differs from a good series from Rio to Santa Catharina by more rufescent upper parts (cinnamon brown instead of raw umber or Brussels brown); deeper, hazel rather than tawny chest; much less distinct brownish edges to the throat feathers, and somewhat smaller size. The chestnut rufous uropygial area is just as abruptly defined against the brown of the back as in its southern ally.

Dr. Snethlage did not meet with this species which has so far been recorded only from the Serra de Ibiapaba, on the western boundary line of Ceará.]

225. *Sclerurus mexicanus macconnelli* Chubb.

Sclerurus mexicanus macconnelli Chubb, Bull. Brit. Orn. Cl., 39, p. 41, 1919—Ituribisci River, British Guiana.

Maranhão: Rosario, ♀ ad., May 15, 1924.—Wing 81; tail 58; bill 23.

Agreeing with specimens from French Guiana and the Tapajóz River.

This is another Lower-Amazonian form ranging into northern Maranhão. Replaced in Bahia by the much darker *S. mexicanus bahiae* Chubb.

226. *Dendrocolaptes certhia medius* Todd.

Dendrocolaptes certhia medius Todd, Proc. Biol. Soc. Wash., 33, p. 74, 1920—Benevides, Pará, Brazil.

Maranhão: Tury-assú, two ♂♂ ad., two ♀♀ ad., Oct. 27, Nov. 15, Dec. 19, 1923.

Identical with specimens from the type locality.

This form is restricted in its range to the Pará District, west to the Tocantins, and the adjacent forested areas of northern Maranhão.

227. *Dendrocolaptes platyrostris intermedius* Berlepsch.

Dendrocolaptes intermedius Berlepsch, Ibis, (5), 1, p. 141, 1883—Bahia.

Dendrocolaptes picumnus cearensis Cory, Auk, 36, p. 541, 1919—Juá, near Igatú, Ceará.

Dendrocolaptes picumnus intermedius Reiser, pp. 66, 144—Parnaguá, Piranha, Pedrinha, Pé do Morro, Santa Philomena, below Nova York, Therezina, below União, Piahy.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 16, 1925.

Piauhy: Ibiapaba, ♂ imm., Dec. 24, 1924.

Additional specimens.—Piauhy: Pedrinha, ♂ ad., June 11; Pé do Morro, near Burity, ♂ ad., June 16; Parnaguá, ♀ ad., May 16; Piranha, ♀ juv., May 29; Santa Philomena, ♀ ad., July 17; Tronco Falls, below Nova York, Rio Parnahyba, ♀ ad., Aug. 4; Therezina, ♀ ad., Aug. 18; below União, Rio Parnahyba, ♂ ad., Aug. 27, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., Aug. 25, 1913. R. H. Becker.

Specimens from northeastern Brazil agree with others from the Rio Preto (Bahia) and Piraputanga (Matto Grosso).

D. platyrostris intermedius is widely distributed over the tableland of Brazil, from Matto Grosso, Goyaz, and Bahia northwards, while farther south it is replaced by the black-capped, more olivaceous *D. p. platyrostris* Spix.

228. *Xiphocolaptes falcirostris* (Spix).

Dendrocolaptes falcirostris Spix, Av. Bras., 1, p. 86, pl. 88, 1824—locality not stated; we suggest Oeiras, Piauhy (type in Munich Museum examined).

Xiphocolaptes falcirostris Reiser, pp. 67, 146—Os Umbús and São Gonçalves, Rio Parnahyba, Piauhy.

Xiphocolaptes promeropirhynchus iguatensis Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 341, 1916—Juá, near Iguatú, Ceará.

Maranhão: São Francisco, opposite Amarante, Rio Parnahyba, adult (unsexed), July 4, 1925; Codó, Cocos, ♀ juv., June 12, 1924.

Piauhy: Ibiapaba, ♀ ad., Jan. 7, 1925.—Iris brown; feet dark gray; bill dark gray, mandible paler; in juv. bill black, mandible dark grayish brown.

Additional specimens.—Piauhy: Os Umbús, ♂ ad., May 11, 1903; São Gonçalves, ♀ ad., Aug. 21, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, two ♂♂, two ♀♀ ad., Aug. 25, 27, Sept. 1, 1913, R. H. Becker.

In the young bird the bill is much shorter, stouter, and almost wholly black. The Buff-cheeked Woodhewer, which may be merely a race of the south-Brazilian *X. albicollis*, is a characteristic species of northeastern Brazil, ranging south at least to the Rio Preto in northwestern Bahia.

229. *Dendroplex picus picus* (Gmelin).

Oriolus picus Gmelin, Syst. Nat., 1, (1), p. 384, 1788—based on "Le Talapio t" Daubenton, Pl. Enl. 605, Cayenne.

Dendroplex picus Reiser, pp. 67, 146—Piranha, Parnaguá, Santa Philomena, Therezina, São Gonçalves, Riacho da Raiz, Piauhý.

Maranhão: Mangunça Island, ♂ ad., March 10, 1924; São Luiz, ♂ ad., Aug. 7, 1923; São Bento, ♂ ad., Sept. 3, 1923; Rosario, ♀ juv., May 8, 1924; Codó, Cocos, ♂ ad., June 23, 1924.

Piauhý: Arára, ♀ ad., Jan. 28, 1925.

Birds from eastern Brazil appear to me inseparable from Guianan skins, although they average slightly more rufescent underneath.

This widely diffused form reaches the southern limit of its range in Bahia and Goyaz.

[230. *Xiphorhynchus spixii* (Lesson).

Picolaptes spixii Lesson, Traité d'Orn., livr. 4, p. 314, Sept., 1830—based on *Dendrocolaptes tenuirostris* (not of Lichtenstein) Spix, Av. Bras., 1, p. 88, pl. 91, fig. 2, 1824—no locality stated; we suggest Pará.

Dendroornis spixi Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 64, 1926—Tury-assú, Maranhão.

A single bird obtained by Madame Snethlage at Tury-assú extends the range of this Lower-Amazonian species from the Pará region to northern Maranhão.]

231. *Xiphorhynchus guttatus eytoni* (Sclater).

Dendrocolaptes eytoni Sclater, P. Z. S. Lond., 21, "1853," p. 69, pl. 57, July, 1854—Rio Capim, near Pará.

Maranhão: Tury-assú, three ♂♂ ad., Oct. 29, Nov. 6, 1923, Jan. 4, 1924; Grajahú, ♂ ad., Oct. 29, 1924.

A Lower-Amazonian form ranging from the right bank of the Rio Madeira into the forested districts of western Maranhão.

[232. *Lepidocolaptes squamatus wagleri* (Spix).

Dendrocolaptes wagleri Spix, Av. Bras., 1, p. 88, pl. 90, fig. 2, 1824—locality not stated; we suggest Oeiras, Piauhý (type in Munich Museum examined).

Picolaptes wagleri Reiser, pp. 67, 145—Riacho Fresco, Piauhý.

Besides the type I have seen only one other example, an adult female secured by Otmar Reiser on May 9, 1903 at Riacho Fresco, near Parnaguá, in the extreme south of Piauhý. Dr. Snethlage has

not succeeded in getting this rare form which is obviously the northern representative of *L. s. squamatus*, of southeastern Brazil (Bahia to northern São Paulo).]

233. ***Lepidocolaptes fuscicapillus layardi*** (Sclater).

Picolaptes layardi Sclater, Ibis, (3), 3, p. 386, pl. 14, 1873—Pará.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Nov. 9, 13, 1923.—Wing 92, (female) 88; tail 78, 80; bill 25, (female) 28.

Identical with specimens from Benevides, near Pará.

A Lower-Amazonian form which ranges from the Tocantins east into northwestern Maranhão.

234. ***Lepidocolaptes fuscus tenuirostris*** (Lichtenstein).

Dendrocolaptes tenuirostris Lichtenstein, Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1818-19, p. 202, 1820; idem, l. c., for 1820-21, p. 265, 1822—Rio São Francisco, Bahia.

Picolaptes fuscus atlanticus Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 341, 1916—Serra de Baturité, Ceará.

The type of *P. fuscus atlanticus*, an adult male obtained by R. H. Becker on July 13, 1913 in the Serra de Baturité, Ceará, is the only specimen examined from the region forming the subject of this paper. It is similar to Bahia skins.

L. f. tenuirostris, while only recorded from Bahia and Ceará, is replaced in southern Brazil by a smaller form with more heavily streaked under parts, *L. fuscus fuscus* (Vieillot).

235. ***Lepidocolaptes angustirostris coronatus*** (Lesson).

Picolaptes coronatus Lesson, Traité d'Orn., livr. 4, p. 314, Sept., 1830—based on Spix, Av. Bras., 1, p. 87, pl. 90, fig. 2, 1824, Piauhý.

Picolaptes bivittatus (not of Lichtenstein) Reiser, pp. 67, 145—Barroca do Maranhão (one day's journey south of the mouth of the Rio Sinho), Alto Parnahyba, Piauhý.

Picolaptes bivittatus bahiae (not of Hellmayr) Reiser, pp. 67, 145—Parnaguá and Lagoa Missão, southern Piauhý.

Maranhão: Codó, Cocos, three ♂♂ ad., two ♀♀ ad., June 13, 16, 30, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 22, 1925; Tranqueira, ♂♀ ad., Sept. 2, 3, 1925.

Goyaz: Philadelphia, ♂ ad., three ♀♀ ad. (in annual molt), Nov. 26, 30, Dec. 11, 1925.

Additional specimens.—Piauhy: Barroca do Maranhão, ♀ ad., July 24; Parnaguá, two ♀ ♀ ad., May 16, 28; ♀ ad., Lagôa Missão, June 6, 1903. O. Reiser (Vienna Museum).

The series is fairly uniform, the specimens from the lower Tocantins being in no way distinguishable from the Cocos birds. The color of the under parts varies between light buff and warm buff, while the lower tail coverts are buckthorn brown or ochraceous tawny, with traces of whitish markings.

Three birds from the region around Parnaguá, southern Piauhy, are similar. An adult male from Barra, three from the Rio Grande, and two from the Preto, in northwestern Bahia are likewise referable to the present form, though one or two somewhat diverge in the direction of *L. a. bahiae*. The type of *P. coronatus*, which I have once more directly compared with Reiser's and Snethlage's series, resembles the average of the present form, and should doubtless be referred here rather than to the deeply colored Ceará race.

The specimen collected by Reiser at Barroca do Maranhão as well as our skins from the Alto Parnahyba at first sight look remarkably like typical *bivittatus*, being very pale, dingy whitish underneath. However, they are exceedingly worn, and careful examination discloses, on the throat, a number of newly-growing feathers which are just as deep buff as in birds from Cocos and other localities. There can be little doubt, therefore, that their pale coloration is due merely to the faded condition of the plumage, and that they belong to *L. a. coronatus* and not to *L. a. bivittatus*.

L. a. coronatus, which stands just between *bivittatus* and *bahiae*, is the common Woodhewer of Maranhão and Piauhy and stretches into the adjacent parts of northern Goyaz and northwestern Bahia.

236. *Lepidocolaptes angustirostris bahiae* (Hellmayr).

Picolaptes bivittatus bahiae Hellmayr, Verh. Zool. Bot. Ges. Wien, 53, p. 219, 1903—Bahia (trade collections).

Piauhy: Deserto, ♂ ad., April 15, 1925; Ibiapaba, two ♀ ♀ ad., ♂ juv., ♀ juv., Dec. 16, 27, 1924, Jan. 1, 16, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., ♀ ad., Aug. 22, 26; Quixada, ♂ ad., three ♀ ♀ ad., June 10, 20, 23, 28, 1913. R. H. Becker.

The Deserto bird and the two young ones from Ibiapaba are quite as deeply ochraceous buff underneath as the Ceará series. One

of the adult females from Ibiapaba is rather paler and closely approaches *L. a. coronatus*, while the second female is even inseparable from certain birds obtained by Dr. Snethlage at Codó, Cocos, Maranhão.

Similar variation being also observable in trade skins from Bahia, I have little doubt that the birds from the extreme east of Piauhý should be referred to *L. a. bahiae*, whose range extends from eastern Bahia north to Ceará.

237. *Campylorhamphus trochilirostris major* Ridgway.

Campylorhamphus trochilirostris major Ridgway, Bull. U. S. Nat. Mus., 50, Part 5, p. 269, 1911—Brazil; Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 341, 1916—Juá and Serra de Baturité, Ceará (crit.).

Xiphorhynchus trochilirostris (not of Lichtenstein) Reiser (1), p. 67, 1910—Lagôa Missão, near Parnaguá, and below União, Rio Parnahyba, Piauhý.

"*Xiphorhynchus trochilirostris* (Licht.) (= *falcularius* Vieill.)" (sic) Reiser (2), p. 144, 1925—same localities.

Piauhý: Arára, ♂ ad., Feb. 11, 1925.—Wing 99; tail, 98; bill 69.

Additional specimens.—Piauhý: Lagôa Missão, two ♀ ♀ ad., June 6, 26; below União, Rio Parnahyba, ♀ ad., Aug. 28, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., ♀ ad., Aug. 18, 31; Serra de Baturité, ♂ ad., ♀ ad., July 16, 22, 1913. R. H. Becker.

The late C. B. Cory found the type (from an unknown locality in Brazil) to agree with our specimens from Ceará which, together with those from Piauhý in the Vienna Museum, have so much longer bills¹ that their separation from *C. t. trochilirostris*, of Bahia seems perfectly justified.

C. trochilirostris major has so far been recorded only from Piauhý and Ceará.

238. *Nasica longirostris* (Vieillot).

Dendrocopus longirostris Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 26, p. 117, 1818—based on "Le Grimpar Nasican" Levaillant, Hist. Nat. Promérops, etc., p. 65, pl. 24, Brazil.

Goyaz: Santo Antonio (Bôa Vista), lower Tocantins, ♂ ad., Jan. 25, 1926.—"Iris brown, feet gray, bill pale gray, base of maxilla blackish."

¹For measurements see Field Mus. Nat. Hist. Pub., Zool Ser., 13, Part 4, p. 343, 1925.

A characteristic Amazonian species. The present record extends its known range in eastern Brazil considerably to the south.

239. *Glyphorhynchus spirurus cuneatus* (Lichtenstein).

Dendrocolaptes cuneatus Lichtenstein, Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1818-19, p. 204, pl. 2, fig. 2, 1820; idem, l. c., for 1820-21, p. 264, 1822—state of Bahia.

Maranhão: Tury-assú, ♀ ad., Nov. 12, 1923.

This race of the Wedge-bill ranges over northeastern Brazil, from the right bank of the Tapajóz east to Pará and south to Bahia.

240. *Sittasomus griseicapillus reiseri* Hellmayr.

Sittasomus griseicapillus reiseri Hellmayr, Verh. Orn. Ges. Bay., 13, p. 190, 1917—Lagôa Missão, near Parnaguá, Piahy.

Sittasomus cearensis Cory, Auk, 38, p. 113, 1921—Juá, near Iguatú, Ceará.

Sittasomus erithacus (subsp?) Reiser (1), p. 68, 1910—Parnaguá, Pedrinha, Logôa Missão, Tinoko, near Burity, Piahy.

"*Sittasomus sylvellus* (= *erithacus*) *reiseri*" (sic) Reiser (2), p. 146, 1925—same localities.

Maranhão: Grajahú, two ♂♂ ad., Oct. 20, 22, 1924; Barra do Corda, ♂ ad., Aug. 12, 1924; Tranqueira, ♂ ad., ♀ imm., Aug. 29, 31, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 21, 24, 1925.

Piahy: Ibiapaba, ♂ ad., Dec. 23, 1924.

Goyaz: Philadelphia, (♂) ad., Nov. 27, 1925.

Additional specimens.—Piahy: Lagôa Missão, ♂ ad., ♀ ad., May 28, June 6; Parnaguá, ♀ imm., May 18; Pedrinha, ♂ ad., May 21; Tinoko, near Burity, ♂ imm., June 16, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., two ♀♀ ad., Aug. 18, 25, 1913. R. H. Becker.

The under parts are somewhat variable in tone, two of the Juá birds and the male from Barra do Corda being much brighter, approaching tawny olive. A specimen in worn breeding plumage (Ibiapaba) has the entire back almost uniform tawny like the tail. The Philadelphia example and a male from São Marcello, Rio Preto, Bahia resemble the average from Maranhão.

S. griseicapillus reiseri ranges from northern Goyaz and northwestern Bahia north to Maranhão, Piahy, and Ceará. It is most nearly related to *S. g. griseicapillus*, of Matto Grosso, Paraguay, and northern Argentina.

241. *Dendrocincla fuliginosa* (Vieillot).

Dendrocopus fuliginosus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 26, p. 117, 1818—based on "Le Grimpier enfumé" Levaillant, Hist. Nat. Promérops, etc., p. 70, pl. 28, Cayenne (type in Paris Museum examined).

Maranhão: Tury-assú, two ♂♂ ad., Nov. 9, Dec. 6, 1923.

A species of Guianan and Lower-Amazonian origin, which stretches into the heavily forested districts of northwestern Maranhão.

[242. *Melanopareia torquata torquata* (Wied).

Synallaxis torquata Wied, Beitr. Naturg, Bras., 3, (2), p. 697, 1831—"Campo Geral des inneren Brasilien"—boundary line of Bahia and Minas Geraes; Reiser, pp. 69, 151—Oro and Serra de Santa Philomena, Piahy.

Piahy: Oro, on the trail from Santo Antonio de Gilboez to Santa Philomena, ♂ ad., ♀ ad., July 8; Serra de Santa Philomena, ♀ imm., July 9, 1903. O. Reiser (Vienna Museum).

This form is known only from Bahia and southern Piahy. Allied races are found in southern Brazil (*M. t. rufescens* Hellmayr) and eastern Bolivia (*M. t. bitorquata* Lafr. and d'Orb.).]

243. *Conopophaga roberti* Hellmayr.

Conopophaga roberti Hellmayr, Bull. Brit. Orn. Cl., 15, p. 54, 1905—Igarapé-assú, Pará.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., ♂ (first annual), Nov. 21, 22, 1923; Rosario, three ♂♂ ad., April 29, May 5, 11, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., ♂ (first annual), three ♀♀ ad., July 25, 27, 28, 1925.

While the birds from the coast region agree with Pará specimens except for their slightly longer tails (39 to 41, against 36-39), those from the upper Parnahyba are decidedly larger (wing of male 75-77, against 69-72; of female 72-74, against 65-69; tail of male 47, against 36-41; of female 43-45, against 33-36). In coloration, there is apparently no difference.

C. roberti was known only from the Pará district east of the Tocantins, until Dr. Snethlage found it at various places in Maranhão.¹

244. *Conopophaga cearae* Cory.

Conopophaga lineata cearae Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 337, 1916—Serra de Baturité, Ceará.

¹Madame Snethlage, as recently recorded (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 45, 1926), traced its range even as far east as the Serra de Ibiapaba, in western Ceará.

Ceará: Serra de Baturité, ♂ ad., July 18, 1913. R. H. Becker (type of species).

This very distinct Gnat-eater is known only from the type. About its characters see Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 3, p. 32, 1924.

245. *Corythopsis delalandi* (Lesson).

Muscicapa delalandi Lesson, Traité d'Orn., livr. 5, p. 392, end of 1830—types from Rio de Janeiro in Paris Museum examined.

Maranhão: Tranqueira, two ♂♂ ad., one ♀ ad., Sept. 8, 16, 1925.

The specimens which agree with others from Bahia, São Paulo, and Misiones signify a considerable northward extension of the range of this southern species.

[246. *Corythopsis torquata anthoides* (Pucheran).

Muscicapa anthoides (Cuvier MS.) Pucheran, Arch. Mus. d'Hist. Nat. Paris, 7, p. 334, 1855—Cayenne (type in Paris Museum examined).

Corythopsis torquata anthoides Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 65, 1926—Tury-assú, Maranhão.

According to Madame Snethlage, a bird secured at Tury-assú, near the coast of Maranhão, belongs to this northern form, well known as an inhabitant of the Guianas and Lower Amazonia, which is thus shown to range into the northern parts of Maranhão, while in the drier interior districts *C. delalandi* obviously takes its place.]

247. *Taraba major stagurus* (Lichtenstein).

Lanius stagurus Lichtenstein, Verz. Dubl. Berliner Mus., p. 45, 1823—Bahia.

Thamnophilus major (not of Vieillot) Reiser (1), p. 65, 1910—Parnaguá, Pedrinha, Lagôa Missão, and Therezina, Piahy.

Taraba major approximans Cory, Auk, 36, p. 88, 1919—Serra de Baturité, Ceará.

Maranhão: Tury-assú, ♂ (first annual), Oct. 29, 1923; São Bento, two ♂♂ ad., two ♀♀ ad., one ♀ (first annual), Aug. 31, Sept. 5, 8, 13, 1923; Barra do Corda, two ♂♂ (first annual), ♀ ad., Aug. 14, 23, Sept. 18, 1924; Codó, Cocos, ♀ (first annual), June 28, 1924; São Francisco, ♂ ad., June 8, 1925; Carolina, ♂ ad., Nov. 12, 1925.

Piahy: Arára, ♂ ad., Jan. 24, 1925.

Goyaz: Philadelphia, ♂ ad., Dec. 7, 1925; Santo Antonio (Boa Vista), ♂ (first annual), Jan. 24, 1926.

Additional specimens.—Maranhão: Bôa Vista, ♂ ad., Feb. 5, 1904; Miritiba, ♂ ad., ♀ ad., Oct. 25, Dec. 12, 1907. F. Schwanda (Munich Museum).—Piauhy: Parnaguá, ♂ ad., May 13; Pedrinha, ♀ ad., May 23; Lagôa Missão, ♀ ad., May 26; Therezina, ♀ juv., Aug. 17, 1903. O Reiser (Vienna Museum).—Ceará: Serra de Baturité, four ♂♂ ad., ♂ (first annual), five ♀♀ ad., July 12, 14, 16, 17, 19; Juá, near Iguatú, two ♂♂ ad., ♂ (first annual), three ♀♀ ad., Aug. 30, Sept. 3, 4, 1913. R. H. Becker.

The adult males from Piauhy, eastern and southern Maranhão (Miritiba, São Francisco) agree with a series from Bahia (Macaco Secco, near Andarahy; Rio Preto) and those from Ceará in the great amount of white on rectrices and upper tail coverts. The male from Philadelphia is likewise a typical example of the form *stagurus*. Females from Miritiba and Piauhy (Therezina and Lake Parnaguá) are quite as light rufous above as specimens from Bahia and Ceará. Birds from the northern coast of Maranhão (Tury-assú, São Bento, Rosario), Barra do Corda and Cocos form the transition to *T. m. semifasciatus* (Cabanis). Some of the males have hardly more white in the tail than Pará examples, while the females, by decidedly deeper rufous upper parts, closely approach the northern race. The white margins to the remiges, in the males, are, however, fully as extensive as in *stagurus*. As a matter of fact, it seems hardly possible to draw a fast line between *semifasciatus* and *stagurus*.

248. *Sakesphorus cristatus* (Wied).

Thamnophilus cristatus Wied, Beitr. Naturg. Bras., 3, (2), p. 1002, 1831—Sertão of the Province of Bahia.

Piauhy: Arára, ♂ ad., Feb. 9, 1925 (No. 1495).

Ceará: Varzea Formosa, two ♂♂ ad., ♀ ad., ♀ imm., Feb. 21, March 3, 4, 1925 (Nos. 1524, 1525, 1570, 1576).—"Iris brown, feet plumbeous, bill black, base of lower mandible plumbeous in female."

♂♂ ad.—Wing 63, 66, 69; tail 57-59; bill 15. ♀ ad.—Wing 64; tail 53; bill 14.

The males differ from the type of *Lanius poecilurus* Pucheran¹—presumably from Minas Geraes—in the Paris Museum by much darker brownish (less rufous) back and pale grayish instead of fulvous flanks. They agree, however, in dimensions and in the small, slender bill. Wied calls the upper parts "reddish chestnut brown," which

¹Arch. Mus. Hist. Nat. Paris, 7, livr. 3, p. 331, pl. 17, fig. 2, 1855.

corresponds to Pucheran's type, but in agreement with our own examples describes the flanks as "ashy gray."

The female lacks the black color on the head, the crown being hazel, while the sides of the head as well as the entire under parts are buff, slightly shaded with grayish along the flanks. The tail is dull brownish black (not rufous brown, as described by Wied), and the white marginal spots are tinged with tawny along the edges; the pale markings on the larger upper wing coverts are buffy rather than white.

In addition to its somewhat inferior size, much smaller bill, and shorter crest, *S. cristatus* may be immediately distinguished from *S. canadensis* by having five or six large marginal spots of white on either web of the rectrices; by the black-and-white barred upper tail coverts of the male; finally by the much paler buff under parts and sides of the head, without any trace of blackish freckles or streaks, in the female sex, not to mention several minor differences.

S. cristatus is with certainty known only from the states of Bahia, Ceará, and the adjoining section of Piahy.

249. ***Thamnophilus doliatus difficilis* Hellmayr.**

Thamnophilus nigricristatus difficilis Hellmayr, Verh. Zool. Bot. Ges. Wien, 53, p. 216, 1903—Rio Claro, state of Goyaz, Brazil.

Thamnophilus radiatus (not of Vieillot) Reiser (1), p. 65, 1910—União and Queimadas, Rio Parnahyba, Piahy.

"*Thamnophilus doliatus subradiatus* Berl. oder *difficilis* Hellm." (sic) Reiser (2), p. 142, 1925—same localities.

Maranhão: Grajahú, two ♂♂ ad., one ♀ ad., Oct. 19, 27, 1924; Pedreiras (Rio Mearim), ♀ ad., July 25, 1924.

Goyaz: Philadelphia, ♂ ad., Dec. 1, 1925.

Additional specimens.—Piahy: União, ♀ ad., Aug. 27; Queimadas, ♂ ad., ♀ ad., Sept. 2, 1903. O. Reiser (Vienna Museum).

The Philadelphia bird is heavily barred underneath, just like a series of eight adult males from the Rio Araguaya, Goyaz, while in those from Grajahú as well as in one from Queimadas in the Vienna Museum the bars are broken or obsolete along the abdominal line. They closely resemble *T. doliatus radiatus*, of Paraguay and Matto Grosso, from which they differ by merely lacking the white at the extreme base of the crown feathers. The females from northern Brazil are hardly different from *radiatus*, unless their under parts average somewhat darker.

T. d. difficilis thus appears to range north to the lower Tocantins, whence it stretches across northern Maranhão to the Rio Parnahyba. In eastern and southern Piauhý, however, it is replaced by the next form.

250. *Thamnophilus doliatus capistratus* Lesson.

Thamnophilus capistratus Lesson, Rev. Zool., 3, p. 226, 1840—Brazil; Reiser (1), p. 65, 1910—Parnaguá, Pedrinha, Lake Parnaguá, Piauhý.

Thamnophilus doliatus capistratus Reiser (2), p. 142, 1925—near Parnaguá.

Piauhý: Arára, ♂ ad., ♂ (first annual), ♀ ad., Jan. 24, 29, 1925.

Ceará: Varzea Formosa, ♀ ad., ♀ juv., Feb. 18, March 3, 1925.

Agreeing with a series from Macaco Secco, near Andarahy, Bahia, and a specimen (male) from Ceará. The adult male from Arára has less white in the tail than any other specimen, only the outer web of the outermost rectrix being distinctly spotted with white, while the remaining tail feathers are uniform black, with exception of the apical spot on the penultimate and a suggestion of one or two marginal streaks on the outer vane of the second and third.

The adult females are immediately distinguished from those of *T. d. difficilis*, of Maranhão, by whitish (instead of deep buff) sides of the head and throat, strongly marked blackish streaks on throat and foreneck, and much paler ochraceous lower parts. The dusky cross lines on the chest noticed in specimens from Lamarão, Bahia¹ are, however, barely suggested, while only the female from Arára shows traces of obsolete subapical markings on the inner secondaries.

T. d. capistratus ranges all over Bahia from the coast to the Rio Preto, extending north to Ceará and penetrating Piauhý in the extreme east on the western slope of the Serra de Ibiapaba and again in the south around Parnaguá, where the Vienna Academy Expedition obtained a number of specimens.

251. *Thamnophilus palliatus* (Lichtenstein).

Lanius palliatus Lichtenstein, Verz. Dubl. Berliner Mus., p. 46, 1823—Bahia.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Oct. 8, Nov. 27, 1923; Rosario, ♂ ad., Apr. 19, 1924.

The pileum, uniform black in the Rosario bird, is dotted all over with white in the male from Tury-assú.

¹See Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 656, 1906; Bull. Soc. Philom. Paris, (9), 8, p. 27, 1906.

Widely distributed in Brazil, from Pará to Rio de Janeiro, west to Matto Grosso, but nowhere common.

252. *Thamnophilus aethiops incertus* Pelzeln.

Thamnophilus incertus Pelzeln, Orn. Bras., 2, pp. 78, 149, Sept., 1868—Pará (type in Vienna Museum examined; =female).

Maranhão: Tury-assú, ♂ (first annual), Nov. 14, 1913.

Somewhat paler than adult males from Pará (Utinga), but this is no doubt due to immaturity.

Like several other endemic species of the Pará district, *T. a. incertus* stretches along the forested coast belt to western Maranhão.

253. *Thamnophilus punctatus pelzelni* Hellmayr.

Thamnophilus punctatus pelzelni Hellmayr, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 3, p. 96, 1924—Abrilongo, near Chapada, Matto Grosso; Reiser (2), p. 141, 1925—Parnaguá, Piahy.

Thamnophilus ambiguus (not of Swainson) Reiser (1), p. 65, 1910—Parnaguá and Lagôa Missão, Piahy.

Maranhão: Barra do Corda, ♂ ad., two ♂ ♂ (first annual), three ♀ ♀ ad., Aug. 21, 23, Sept. 9, 18, 1924; Grajahú, ♂ ad., Oct. 25, 1924; Tranqueira, ♂ (first annual), Aug. 25, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ (first annual), July 21, 1925.

Piahy: Arára, ♂ (first annual), ♀ ad., Jan. 24, Feb. 5, 1925; Deserto, ♂ ad., ♀ ad., Apr. 2, 7, 1925.

Ceará: Varzea Formosa, ♂ ad., ♀ ad., Feb. 25, 1925.

Additional specimens.—Maranhão: Miritiba, ♂ ad., ♀ ad., June 5, Nov. 16, 1907. F. Schwanda (Munich Museum).—Piahy: Parnaguá, two ♀ ♀ ad., May 16, 28; Lagôa Missão, two ♀ ♀ ad., May 26, 28, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ (first annual), two ♀ ♀ ad., Aug. 14, 26, 1913. R. H. Becker.

Birds from northwestern Bahia (north of Santa Rita, Rio Preto) and a number of specimens recently received by the Museum from Araçatuba and Baurú in northern São Paulo are also quite typical of this form. A single male from Macaco Secco, near Andarahy, central Bahia, is similar on the under parts, but in tail markings approaches *T. p. ambiguus*, of the coast district of Bahia.

T. punctatus pelzelni is an endemic species of the campo region, ranging from Ceará and Maranhão through the central states of

Brazil south to northern São Paulo and west to eastern Matto Grosso.

254. *Thamnophilus amazonicus paraensis* Todd.

Thamnophilus amazonicus paraensis Todd, Proc. Biol. Soc. Wash., 40, p. 154, 1927—Benevides, Pará.

Maranhão: Tury-assú, two ♂♂ ad., two ♀♀ ad., Oct. 13, 16, 25, 1923; Rosario, ♂ (in juvenile molt), May 19, 1924.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., ♂ (first annual), Jan. 27, 28, 1926.

Additional specimens.—Maranhão: near São Luiz, three ♂♂ ad., two ♀♀ ad., May, June, 1905. F. Schwanda (Sophia Museum, Bulgaria).

Another Lower-Amazonian form whose range extends through the wooded coast belt to northern Maranhão. The western frontier of this state has no doubt been reached by way of the forests bordering the banks of the southerly affluents of the Amazon.

255. *Thamnophilus caerulescens cearensis* (Cory).

Erionotus cearensis Cory, Auk, 36, p. 88, 1919—Serra de Baturité.

Ceará: Serra de Baturité, ♂ ad., July 15, 1913. R. H. Becker (type of species).

The type (and only known specimen) differs from a considerable series of *T. c. caerulescens* in decidedly larger, stronger bill and extensively slate gray forehead. It is totally different from *T. punctatus pelzelni* and, although its characters need corroboration by further material, it obviously represents the typical form in the north. It would be interesting to know the female.

256. *Thamnophilus torquatus* Swainson.

Thamnophilus torquatus Swainson, Zool. Journ., 2, p. 89, 1825—Urupé, Bahia; Reiser, pp. 66, 142—Santa Philomena, Piahy.

Goyaz: Philadelphia, three ♂♂ ad., Nov. 30, Dec. 21, 1925.—Wing 62, 62, 64 mm.

Identical with specimens from Bahia and Minas Geraes.

Widely distributed throughout the campo region of Brazil, from Pernambuco, Piahy, and Goyaz south to northern São Paulo and western Minas Geraes.

257. *Dysithamnus mentalis emiliae* Hellmayr.

Dysithamnus mentalis emiliae Hellmayr, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 92, 1912—Santo Antonio do Prata, Pará.

Maranhão: Tury-assú, ♂ ad., ♂ (first annual), Oct. 26, Nov. 19, 1923; Victoria (Queimadas), Rio Grajahú, ♀ ad., Nov. 20, 1924.

This is another Lower-Amazonian form whose range extends from the Tocantins, in the state of Pará, to western Maranhão. Nearly allied races occur in Matto Grosso and Goyaz (*D. mentalis affinis*) and southeastern Brazil (*D. m. mentalis*).

258. *Thamnomanes caesius hoffmannsi* Hellmayr.

Thamnomanes caesius hoffmannsi Hellmayr, Bull. Brit. Orn. Cl., 16, p. 53, 1906—Santo Antonio do Prata, Pará.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., three ♀ ♀, Nov. 12, 20, 22, Dec. 6, 1923.

Agreeing with specimens from Utinga, near Pará.

A Lower-Amazonian species that reaches the eastern limit of its distribution in the forest region of northern Maranhão.

259. *Myrmotherula hauxwelli hellmayri* Snethlage.

Myrmotherula hauxwelli hellmayri Snethlage, Ornith. Monatsber., 14, p. 9, 1906—near Pará, Brazil.

Maranhão: Tury-assú, Alto de Algeria, two ♂♂ ad., ♀ ad., Nov. 8, 20, 1923.

Agreeing with specimens from Utinga. This is again an endemic form of the Pará district, reaching into western Maranhão.

260. *Myrmotherula axillaris axillaris* (Vieillot).

Myrmothera axillaris Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 12, p. 113, 1817—"La Guyane" = Cayenne.

Maranhão: Tury-assú, ♂ ad., ♀ ♀, Oct. 26, Nov. 15, Dec. 10, 1923.

Goyaz: Santo Antonio (Bôa Vista), ♀ ad., Feb. 3, 1926.

Two of the females, including the one from Santo Antonio, are much more rufous throughout than the third example which agrees, in color and size, with the general run of *axillaris*.

An Amazonian species of wide distribution, the western section of Maranhão forming the eastern limit of its range. Represented

by *M. a. luctuosa* Pelz. in eastern Brazil (Pernambuco to Rio de Janeiro).

261. *Myrmotherula menetriesii omissa* Todd.

Myrmotherula menetriesii omissa Todd, Proc. Biol. Soc. Wash., 40, p. 158, 1927—Benevides, Pará.

Maranhão: Tury-assú, ♂ ad., ♂ imm., ♀ ad., Oct. 23, Nov. 9, 1923.

Mr. Todd, with ample material before him, has recently separated the Lower-Amazonian form to which I had previously referred as being probably different. It is intermediate between *M. m. cinerei-ventris*, of Guiana and the north bank of the Amazon, and *M. m. berlepschi*, from the upper Rio Madeira. Our specimens agree with the types in the Carnegie Museum. Its range extends from the Rio Tapajóz east into northern Maranhão.

262. *Myrmorchilus strigilatus strigilatus* (Wied).

Myiothera strigilata Wied, Beitr. Naturg. Bras., 3, (2), p. 1064, 1831—state of Bahia.

Formicivora strigilata Reiser (1), p. 66, 1910—Parnaguá, Piauhý.

Myrmorchilus (Formicivora) strigilatus Reiser (2), p. 144, 1925—Parnaguá.

Piauhý: Arára, four ♂ ad., one ♂ imm., Jan. 24, 28, Feb. 4, 9, 11, 1925.

Ceará: Varzea Formosa, ♂ imm., ♀ ad., two ♀ ♀ imm., Feb. 20, 24, 26, March 4, 1925.—“Iris brown, feet plumbeous, bill black.”

Additional specimens.—Piauhý: Parnaguá, ♂ ad., May 25, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ♀ ad., Aug. 18, 19, 1913. R. H. Becker.

Immature birds (first annual plumage?) have buff instead of white) apical edges to the primary coverts.

This species is peculiar to the campo region of northeastern Brazil, in states of Bahia, Ceará, and Piauhý. A closely allied race, *M. strigilatus suspicax* Wetmore, is found in southwestern Matto Grosso, western Paraguay, and northern Argentina.

263. *Herpsilochmus pectoralis* Sclater.

Herpsilochmus pectoralis Sclater, P. Z. S. Lond., 25, p. 132, 1857—locality unknown; we suggested Bahia.

Maranhão: Codó, Cocos, ♂ ad., ♀ ad., June 19, 28, 1924.—Wing 56, (female) 53; tail 42, (female) 40; bill 14, 14.

"Iris brown, feet plumbeous, bill black, lower mandible gray."

Additional specimen.—Maranhão: Primeira Cruz, ♀ ad., May 5, 1906. F. Schwanda (Tring Museum).—Wing 54; tail 43; bill 15.

In coloration like Bahia skins, but tail shorter.

H. pectoralis is known only from Bahia collections and the two localities in eastern Maranhão recorded above. It is probably a geographical representative of *H. longirostris* Pelzeln which ranges from Matto Grosso and northern São Paulo through Goyaz to the extreme south of Piauhý, where O. Reiser obtained two typical females at Santa Philomena and Santa Maria, west of Santo Antonio de Gilboez.

[264. *Herpsilochmus longirostris* Pelzeln.

Herpsilochmus longirostris Pelzeln, Orn. Bras., 2, pp. 80, 150, 1868—Cuyabá, Matto Grosso; Reiser, pp. 66, 142—Santa Maria and Santa Philomena, Piauhý.

Piauhý: Santa Maria, ♀ ad., July 6, 1903; Santa Philomena, ♀ ad., July 17, 1903. O. Reiser (Vienna Museum).—Wing 62, 63, tail 57, 58; bill 16, 17.

A characteristic species of the Brazilian table-land, in states of Matto Grosso, Goyaz, and São Paulo, extending north into the extreme south of Piauhý.]

265. *Herpsilochmus pileatus pileatus* (Lichtenstein).

Myiothera pileata Lichtenstein, Verz. Dubl. Berliner Mus., p. 44, 1823—Bahia (type examined).

Herpsilochmus atricapillus (not of Pelzeln) Reiser (1), p. 66, 1910—part, São Gonçalves, below the mouth of the Poty, Rio Parnahyba.

Herpsilochmus pileatus atricapillus Reiser (2), p. 143, 1925—part, São Gonçalves, Piauhý.

Maranhão: Barra do Corda, two ♂♂ ad., one ♀ ad., Aug. 8, Sept. 22, 27, 1924; Grajahú, ♀ ad., Oct. 21, 1924.

Ceará: Varzea Formosa, ♂ ad., Feb. 25, 1925.

Additional specimens.—Ceará: Serra de Baturité, ♂ ad., two ♂♂ imm., July 15, 16, 1913. R. H. Becker.—Piauhý: São Gonçalves, below the mouth of the Poty, Rio Parnahyba, ♀ ad., Aug. 21, 1903. O. Reiser (Vienna Museum).

From the study of this new material it results that I was mistaken in extending¹ the range of *H. p. atricapillus* to Ceará and northern Piauhý. The specimens secured by Dr. H. Snethlage as well as those previously collected for the Museum by R. H. Becker in Ceará are evidently inseparable from topotypes of *H. pileatus*. Compared with a series from the interior of Brazil (Goyaz, Minas Geraes, and São Paulo), they are decidedly smaller, with shorter, slenderer bills; the males have the interscapular region extensively white, more or less spotted with black, and the females are much paler, less buff underneath. The coloration of the under parts, in the male sex, is subject to much individual variation. In one from Lamarão (near Bahia), two from Barra do Corda, and one from Varzea Formosa Ceará, the entire ventral surface is very nearly pure white save for a faint grayish tinge along the flanks and a very slight buffy suffusion in the anal region, being thus much like *H. p. atricapillus*. Three others from Bahia, including one of Lichtenstein's original examples, and our three males from Serra de Baturité, Ceará, however, are strongly suffused with gray underneath.

The female from Grajahú, while agreeing with one from Bahia in pale under parts, is somewhat larger, and approaches *atricapillus* in size of bill.

A female from Macuca, Pernambuco, in the British Museum and another from São Gonçalinho, northern Piauhý, at Vienna are, no doubt, also referable to the present form.

MEASUREMENTS

	Wing	Tail	Bill
Four males from Bahia	51,51,52,52	44,45,46	13-14
One male from Lamarão, Bahia	51½	50	13
Three males from Serra de Baturité, Ceará	51,51,52	53,54,54	14
One male from Varzea Formosa, Ceará	49	46	13
Two males from Barra do Corda, Maranhão	47,51	(molting)	12½,13
One female from Bahia	48½	(incomplete)	13
One female from São Gonçalinho, Piauhý	50	51	14
One female from Barra do Corda, Maranhão	51	52	14
One female from Grajahú, Maranhão	52	54	15

H. p. pileatus, thus, ranges from Bahia north to Ceará and thence through northern Piauhý west to central Maranhão.

¹See Field Mus. Nat. Hist. Publ., Zool. Ser., 13, Part 3, pp. 171-173, 1924.

266. *Herpsilochmus pileatus atricapillus* Pelzeln.

Herpsilochmus atricapillus Pelzeln, Orn. Bras., 2, pp. 80, 150, Sept., 1868—Porto do Rio Paraná, São Paulo (type) and Goyaz City, Goyaz; Reiser (1), p. 66, 1910—part, Lagôa do Passão and Lagôa Missão, near Parnaguá, Piahy.

Herpsilochmus pileatus atricapillus Reiser (2), p. 143, 1925—part, same localities.

Maranhão: Tranqueira, two ♂♂ ad., ♀ ad., Aug. 17, 27, Sept. 16, 1925.—Wing 57, 58, (female) 54; tail 60, 62, (female) 58; bill 15, 16, (female) 14.

Additional specimens.—Piahy: Lagôa do Passão (on the road from Parnaguá to Santo Antonio de Gilboez), ♂ ad., June 25, 1903; Lagôa Missão, near Parnaguá, ♀ ad., May 26, 1903. O. Reiser (Vienna Museum).—Wing (male) 53, (female) 53; tail 57, (female) 56; bill 15, —.

These specimens as well as an adult male from Porto da Pedra, Rio Preto, Bahia agree in size with a series from the interior of Brazil, including a topotype from northern São Paulo (Araçatuba). While two males secured by O. Reiser on the Rio Preto and at the Lagôa do Passão resemble the latter example in whiteness of under parts, those from Tranqueira are conspicuously clouded or tinged with grayish across chest and along flanks, obviously an individual variation. One of the Tranqueira males, in the black-and-white interscapulum, closely approaches *H. p. pileatus*, of northern Maranhão.

H. p. atricapillus replaces the preceding race in central Brazil, its range extending northward to northwestern Bahia (Rio Preto) and the extreme south of Piahy and Maranhão.

267. *Herpsilochmus rufimarginatus frater* Sclater and Salvin.

Herpsilochmus frater Sclater and Salvin, P. Z. S. Lond., 1880, p. 159—Sarayacu, eastern Ecuador.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Oct. 18, Nov. 5, 1923.

In essential color-characters, viz., bright hazel pileum, pure white throat and buffy tinge on foreneck, the female resembles specimens from the Río Napo and Bogotá. Both examples, however, have decidedly slenderer bills and paler (hazel rather than chestnut) wing edges, thereby pointing to *H. r. rufimarginatus*, of southeastern Brazil.

This again is an Amazonian form, whose range extends into the heavily forested area of western Maranhão.

268. *Neorhophias grisea grisea* (Boddaert).

Turdus grieseus (sic) Boddaert, Tabl. Pl. Enl., p. 39, 1783—based on "Le Grisin, de Cayenne" Daubenton, Pl. Enl. 643, fig. 1, Cayenne.

Formicivora grisea Reiser (1), p. 66, 1910—Illa São Martin, Rio Parnahyba, Piauhý.

Neorhophias (Formicivora) grisea Reiser (2), p. 143, 1925—Parnaguá and Illa São Martin, Piauhý.

Maranhão: São Luiz, ♂ ad., ♂ juv., Aug. 8, 10, 1923; Rosario, ♀ ad., May 13, 1924; Barra do Corda, ♂ ad., ♂ juv., ♀ ad., Aug. 21, 23, 1924; Grajahú, ♀ ad., Oct. 21, 1924; Codó, Cocos, ♀ ad., July 8, 1924; São Francisco, Rio Parnahyba, ♀ ad., July 6, 1925; Tranqueira, ♂ ad., ♀ ad., August 27, 30, 1925; Carolina, Rio Tocantins, ♀ ad., Nov. 9, 1925.

Additional specimens.—Maranhão: Miritiba, two ♂♂ ad. F. Schwanda (Munich Museum).—Piauhý: Illa São Martin, Rio Parnahyba, ♀ ad., Aug. 22, 1903. O. Reiser (Vienna Museum).

A species of wide distribution, ranging from the Guianas south to Matto Grosso, Goyaz, Bahia, and probably even to Rio de Janeiro.

269. *Neorhophias melanogaster bahiae* (Hellmayr).

Formicivora melanogastra bahiae Hellmayr, Bull. Brit. Orn. Cl., 23, p. 65, 1909—Lamarão, near Bahia City, Bahia.

Formicivora grisea pallescens Snethlage, Journ. Orn., 73, p. 271, 1925—Serra de Ibiapaba, Ceará (type in Berlin Museum examined).

Formicivora melanogastra (not of Pelzeln) Reiser (1), p. 66, 1910—Pé do Morro, Piauhý.

Formicivora grisea (not *Turdus grieseus* Boddaert) Reiser (1), p. 66, 1910—part, Nos. 434, 459, 714, Fazenda da Serra, Rio Grande, Bahia and Parnaguá, Piauhý.

Neorhophias (Formicivora) melanogastra Reiser (2), p. 143, 1925—Fazenda da Serra, Rio Grande, Bahia and Pé do Morro, Piauhý.

Piauhý: Arára, two ♂♂ ad., ♀ ad., Jan. 22, 23, 28, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, two ♂♂ ad., ♀ juv., ♀ ad., Aug. 8, 23, 24, 25, 1913, R. H. Becker; Ladeira Grande, ♂ ♀ ad., Aug. 10, 11, 1915, F. Lima; Ipú, ♀ ad., May 23, 1910, E. Snethlage (Berlin Museum).—Piauhý: Parnaguá, ♂ ad., May 15, 1903, O. Reiser, No. 714; Pé do Morro, near Burity, ♀ ad., June 16, 1903, O. Reiser, No. 959 (Vienna Museum).

Wing (male) 51-54, (female) 48-53; tail 53-58, (female) 52-57; bill 13-14.

The more satisfactory material that became available since the publication of Part 3 of the "Catalogue of Birds of the Americas"¹ tends to show that *N. m. bahiae* is a recognizable race after all.

On comparison with two males (topotypes) from Goyaz; and another from northern São Paulo (São Jeronimo, Tieté), those in the present series are slightly smaller and paler as well as less brownish on the upper parts, while there is always an extensive area of white on the flanks, this color running up to the sides of the neck and joining the superciliary stripe.

The range of this form can only approximately be indicated. Specimens from Ceará and Piauí are identical, in size and coloration, with the type from Lamarão, near the city of Bahia. Two adult males from Fazenda da Serra, Rio Grande (O. Reiser, Nos. 434, 459, Vienna Museum), a female from Barra, and a couple of adults from Joazeiro, Rio São Francisco, Bahia (Munich Museum, Nos. 09.105-106) are likewise referable to this race, whose range would thus seem to comprise also the northern section of the state of Bahia.

Curiously enough, an adult male from Macaco Secco, near Andaraí, in central Bahia, in the collection of Field Museum is apparently different, being larger and darker both above and below, with just a few grayish white feathers on the lower flanks, and cannot be distinguished from a Goyaz specimen of typical *melanogaster*.

It is to be hoped that the researches now being carried on by Madame Snethlage in southern Brazil will soon enlighten us on the distribution of these Antbirds.²

¹Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 3, No. 223, Nov., 1924.

²I take this opportunity of correcting another mistake in Part 3 of the "Catalogue." While attending the Ornithological Congress in Denmark in May, 1926, I was so fortunate as to discover in the Zoological Museum at Copenhagen two females of the species, described and figured by Ménériès under the inapplicable name *Formicivora nigricollis* from a male obtained by him on the banks of the Rio Bacalhão, in Minas Geraes, and it was at once evident that I had erred in referring (l. c., p. 189) *Formicivora deluzae* Ménériès to this form. The females are of the *N. melanogaster* type, i. e. having a broad blackish streak through the eye, surmounted by a wide buff supercilium, and clear buff under parts, while the type of *F. deluzae* is barely distinguishable from the female of *N. g. grisea*. There are three skins in the Copenhagen Museum: an adult male taken by Reinhardt at Sete Lagoas in August, 1855; an adult female obtained by Lund at Lagoa Santa on June 4, 1836; and a second female, without specified locality, marked "Lund, 1829"—no doubt the example from Aldea da Pedra, Rio Parahyba, Rio, July 6, 1828, recorded under *F. melanogaster* by Reinhardt (Vidensk. Medd. Naturhist. Foren., 1870, p. 364) whose label it still bears. This Antbird of which I have now seen eight specimens, all from Minas Geraes and Rio de Janeiro, is a perfectly distinct species, combining the strong heavy bill and brownish-edged tertials of *N. grisea* with the wide superciliaries and female characters of *N. melanogaster*,

270. *Neorhophias rufa rufa* (Wied).

Myiothera rufa Wied, Beitr. Naturg. Bras., 3, (2), p. 1095, 1831—interior of Bahia.

Formicivora rufa Reiser (1), p. 66, 1910—Santa Philomena, Serra de Santa Philomena, Santa Maria, and Corrientes, Rio Parnahyba, Piauhy.

Neorhophias (Formicivora) rufa Reiser (2), p. 143, 1925—same localities.

Maranhão: Ponto (Canella), ♀ ad., ♂ juv. (?), Aug. 29, 30, 1924; Tranqueira, two ♂♂ ad., three ♀♀ ad., Aug. 25, 28, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 27, 1925.

Goyaz: Philadelphia, ♀ ad., Dec. 12, 1925.

Additional specimens.—Piauhy: Santa Philomena, ♀ ad., July 11; Serra de Santa Philomena, three ♀♀ ad., July 9; Santa Maria, west of Santo Antonio de Gilboez, ♂ ad., July 6; Corrientes, Rio Parnahyba, ♂ ad., ♀ ad., July 26, 1903. O. Reiser (Vienna Museum).

The series from Maranhão fully substantiates the existence of two races as defined elsewhere.¹ The specimens are decidedly deeper rufous above, with the tail less distinctly parti-colored, and the black streaking on the under parts of the females, extending up to the

but differing from both by bright mars brown (instead of mouse gray or brownish slate) upper parts. I propose to call it

Neorhophias serrana sp. nov.

Type from Sete Lagôas, Minas Geraes, Brazil, in Copenhagen Museum. "9/10 56. No. 153." Adult male. August, 1855. J. Reinhardt.

Characters.—Not unlike *N. m. melanogaster*, but upper parts mars brown (instead of brownish slate); tertials along outer web narrowly fringed with cinnamon-brown or russet (instead of broadly edged with white); superciliaries much widened posteriorly; males with sides of breast and flanks smoke grayish, the latter sometimes suffused with whitish or buffy brown; female underneath deeper buff; bill much stronger and stouter. Wing (male) 51-56, (female) 50-53; tail 53-59, (female) 52-53; bill $13\frac{1}{2}$ - $14\frac{1}{2}$.

Range.—Serras of southern Brazil, in states of Minas Geraes (Rio Bacalhão; Vargem Alegre and Rio Gualaxú, near Marianna; Lagôa Santa and Sete Lagôas), Espírito Santo (Baixo Guandú), and Rio de Janeiro (Aldea da Pedra and Cantagallo, Rio Parahyba).

Remarks.—The complete synonymy—from which, however, the references relating to *Formicivora deluzae* must be omitted—is given in Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 3, pp. 189-190, 1924. Madame Snethlage (Journ. Orn., 74, p. 372, 1927) has lately discussed this form, calling it *Neorhophias grisea nigricollis* (Ménétr.), which is inadmissible, since *Formicivora nigricollis* Swainson, 1825, a synonym of *N. g. grisea*, invalidates Ménétrière's later name for any other member of the genus.

¹Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 3, pp. 192-194, 1924.

chin, is much wider than in *N. r. rufatra* (Lafr. and d'Orb.), of Matto Grosso.

The "young male" from Ponto (Canella) generally resembles the female, but the throat is plain white and the whole foreneck occupied by a large, half-concealed black blotch. A "female" from Corrientes, Piahy, in the Vienna Museum is similarly colored. I cannot offer any plausible explanation for this singular plumage.

N. r. rufa inhabits eastern Brazil, from Goyaz and Bahia north to the lower Amazon. Farther west and south it is replaced by *N. rufa rufatra* (Lafr. and d'Orb.).

[271. *Ramphocaenus melanurus melanurus* Vieillot.

Ramphocaenus melanurus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 29, p. 6, 1819—"Brésil" = Rio de Janeiro (type examined); Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 65, 1926—Tury-assú, Maranhão.

Two specimens were obtained by Madame Snethlage at Tury-assú. This form inhabits the coast region of Brazil from Pará to São Paulo, while related races are found in Guiana and Amazonia.]

272. *Cercomacra sclateri* Hellmayr.

Cercomacra sclateri Hellmayr, Nov. Zool., 12, p. 288, 1905—Chyavetas, Ucayali River, Peru.

Maranhão: Tury-assú, ♀ ad., Nov. 13, 1923.

An Amazonian species, reaching the eastern limit of its range in the forested section of western Maranhão.

273. *Cercomacra tyrannina laeta* Todd.

Cercomacra tyrannina laeta Todd, Proc. Biol. Soc. Wash., 33, p. 73, 1920—Benevides, Pará, Brazil.

Maranhão: Tury-assú, ♂ ad., two ♂♂ imm., ♀ ad., Oct. 16, 17, 18, 23, 1923.

A Lower-Amazonian form, ranging from Manáos to western Maranhão.

274. *Pyriglena leuconota leuconota* (Spix).

Myiothera leuconota Spix, Av. Bras., 1, p. 72, pl. 72, fig. 2, 1824—Pará (type in Munich Museum examined; =female).

Pyriglena lenconota (sic) Reiser (1), p. 100, 1910—Miritiba, Maranhão.

Pyriglena leuconota Reiser (2), p. 144, 1925—Miritiba.

Maranhão: Tury-assú, ♂ imm., three ♀ ♀ ad., Oct. 16, 24, Dec. 6, 1923; Rosario, ♂ ad., May 10, 1924.

Additional specimens.—Maranhão: Miritiba, ♂ ad., Oct. 3, 1907; ♀ ad., May 30, 1907. F. Schwanda (Vienna Museum).

Identical with Pará examples.

Spix's Fire-eye is peculiar to the Pará district, ranging along the heavily-forested coastal belt of Maranhão at least as far east as Miritiba, while the western limit of its distribution is yet to be ascertained.

Two specimens from Pernambuco, though agreeing in coloration, have much larger bills and very likely represent a separable form.

[275. *Hypocnemoides maculicauda* (Pelzeln).

Hypocnemis maculicauda Pelzeln, Orn. Bras., 2, p. 89, Sept., 1868—type from Villa Maria = São Luiz de Cáceres, Matto Grosso, in Vienna Museum examined; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 65, 1926—Tury-assú, Maranhão.

Madame Snethlage's record extends the range of this Amazonian species from the Pará region to northern Maranhão.]

[276. *Sclateria naevia naevia* (Gmelin).

Sitta naevia Gmelin, Syst. Nat., 1, (1), p. 442, 1788—based on the "Wall-creeper of Surinam" Edwards, Glean. Nat. Hist., 3, p. 284, pl. 346, low. fig. (= ♂ ad.), Surinam.

Maranhão: Miritiba, ♀ ad., Feb. 18, 1908. F. Schwanda (Tring Museum); ♂ ad., no date, 1910, same collector (Senckenbergian Natural History Museum, Frankfort on the Main).

A Guianan species ranging through the Pará district into northern Maranhão.]

277. *Formicarius ruficeps amazonicus* Hellmayr.

Formicarius ruficeps amazonicus Hellmayr, Ornith. Monatsber., 10, p. 34, 1902—Borba, Rio Madeira.

Maranhão: Tury-assú, ♂ ad., Nov. 23, 1923.—Wing 85; tail 50.

Again an Amazonian representative whose range extends into the forest region of western Maranhão.

278. *Formicarius analis analis* (Lafresnaye and d'Orbigny).

Myiothera analis Lafresnaye and d'Orbigny, Syn. Av., 1, in Mag. Zool., 7, cl. 2, p. 14, 1837—Yuracares and Chiquitos, Bolivia.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Nov. 21, Dec. 6, 1923.

This, too, is an Amazonian form of wide distribution, which reaches its eastern limit in the forest district of northern Maranhão.

279. *Hylophylax poecilinota vidua* (Hellmayr).

Hypocnemis vidua Hellmayr, Nov. Zool. 12, p. 290, 1905—Igarapé-assú, Pará.

Maranhão: Tury-assú, Alto de Alegria, ♀ ad., ♂ juv., Nov. 9, 1923.

These specimens constitute the first record for Maranhão of this Lower-Amazonian form which ranges west to the right bank of the Tapajóz.

280. *Phlegopsis nigromaculata paraensis* Hellmayr.

Phlegopsis paraensis Hellmayr, Ornith. Monatsber., 12, p. 53, 1904—Pará.

Maranhão: Tury-assú, three ♂♂ ad., two ♀♀ ad., Oct. 24, Dec. 11, 1923.

Another Lower-Amazonian species ranging from the right bank of the Tapajóz to the forest region of northern Maranhão.

281. *Grallaria martinsi* Snethlage.

Grallaria martinsi Snethlage, Journ. Orn., 72, p. 447, 1924—Serra de Ibiapaba, Ceará.

Ceará: Varzea Formosa, three ♂♂ ad., March 4, 5, 1925.—Wing 75, 78, 79; tail 42, 43, 45; bill 17, 18, 19.—“Iris brown, feet pale brown, bill dark gray, paler below.”

These specimens, practically topotypes of *G. martinsi*, are very different from both *G. macularia paraensis*, of Lower Amazonia, and *G. “ochroleuca,”* of São Paulo. From the former, they are easily distinguished by uniform pale grayish brown upper parts (without any olive on back or slate gray on pileum); distinct buffy white superciliaries, surmounted by a narrow blackish border; much paler, buffy white instead of ochraceous loreal spot and orbital ring; light grayish brown (not olivaceous) larger upper wing coverts, with much smaller, whitish instead of ochraceous apical spots, etc. Their relations to *G. ochroleuca* (Wied), however, cannot be ascertained owing to lack of material from the type locality (Arrayal da Conquista, Bahia),¹ and for the present, Madame Snethlage's name may be adopted for the Ceará bird.

¹See Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 3, p. 357, 1924.

282. *Glaucis hirsuta hirsuta* (Gmelin).¹

Trochilus hirsutus Gmelin, Syst. Nat., 1, (1), p. 490, 1788—based on Brisson (ex Marcgrave), northeastern Brazil.

Maranhão: Tury-assú, ♂ juv., Dec. 5, 1923 (wing 56; tail 36); São Bento, ♂ ad., Sept. 12, 1923 (wing 63; tail 40).

These birds agree with others from Pará and Bahia, and doubtless represent typical *G. hirsuta*, exclusively based on Marcgrave's account of a Humming-bird met with in northeastern Brazil.

The range of *G. h. hirsuta* cannot be outlined with any degree of finality, owing to lack of proper material. It appears, however, to comprise all of Brazil south of the Amazon, west to Matto Grosso and south to São Paulo. Three males from Roraima (British Guiana (*G. roraimae* Boucard) and one from Munduapo, R. Orinoco, Venezuela are not appreciably different, suggesting an even wider area of distribution.

283. *Threnetes leucurus medianus* subsp. nov.

Threnetes cervinicauda (not of Gould) Hellmayr, Nov. Zool., 13, p. 374, 1906—Santo Antonio do Prata, Pará; idem, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 93, 1912—Pará and Santo Antonio; Snethlage, Bol. Mus. Goeldi, 8, p. 188, 1914—Pará and Santo Antonio do Prata.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Dec. 15, 23, 1923.

Type from Tury-assú, Maranhão, Brazil, in Field Museum of Natural History, No. 63204. Male adult. December 15, 1913. H. Snethlage (coll. No. 602).

Characters.—Similar to *T. l. leucurus*, of Guiana, but light areas on lateral rectrices light buff instead of pure white, though considerably paler than in *T. l. cervinicauda*, of Upper Amazonia, from which it, furthermore, differs by more golden green upper parts and shorter blackish tip to the lower mandible. Wing (male) 63-64, (female) 57; tail 35-36, (female) 31-33; bill 28-30.

Range.—Northeastern Brazil, south of the Amazon, in states of Pará (Pará, Santo Antonio do Prata) and Maranhão (Tury-assú).

In the light of the fresh material now available, this form to which Simon (l. c., p. 151) and the writer had called attention proves to be

¹The late Eugène Simon (Hist. Nat. Troch., p. 248, 1921) revived the name *Trochilus tomineo* Linnaeus (Syst. Nat., 10th ed., 1, p. 121, 1758; Mus. Ad. Frid., II., Prodr., p. 23, 1764—"America") for this species. While admitting that descriptions of bill and tail fit it remarkably well, I hesitate to endorse the proposed change, since certain other passages, such as "corpus fuscum, abdomine albo" and "remiges ferrugineo-fuscae" can hardly be reconciled with the characters of *Glaucis hirsuta*.

easily separable from both *T. l. leucurus* and *T. l. cervinicauda*. As far as coloration of the lateral tail feathers is concerned, *T. l. medianus* occupies an intermediate position between its allies, the light area being neither pure white as in *leucurus*, nor light ochraceous buff as in *cervinicauda*. The upper parts are decidedly golden green, exactly like *T. l. leucurus*, while the Upper-Amazonian form is of a purer metallic green above; the under surface, below the ochraceous tawny gorget, is grayish buff, much the same as in *leucurus*, and less rufescent than in *T. l. rufigastrea*, of northern Peru. The blackish tip to the lower mandible, while variable in extent, is sometimes barely suggested.

Five specimens from Pará and two from Maranhão serve to demonstrate the constancy of this form, and its range being entirely cut off from that of *cervinicauda* by the intervening white-tailed *T. l. leucurus*, I feel perfectly justified in proposing a separate name for the Lower-Amazonian bird.

The four races of the Light-tailed Humming-bird stand, therefore, as follows:

(a) ***Threnetes leucurus leucurus* (Linnaeus).**¹

Light zone of lateral tail feathers pure white; under parts grayish buff.

French, Dutch, and British Guiana; Amazonia (Rio Madeira; Teffé Rio Solimões).²

(b) ***Threnetes leucurus rufigastrea* Cory.**³

Light zone of lateral tail feathers pure white; under parts pinkish buff, passing into cinnamon on sides.

Eastern Peru, south of the Marañón (Moyobamba).

(c) ***Threnetes leucurus medianus* Hellmayr.**

Light zone of lateral tail feathers light buff; upper parts golden green.

Northeastern Brazil, in states of Pará and Maranhão.

¹*Trochilus leucurus* Linnaeus, Syst. Nat., 12th ed., 1, p. 190, 1766—based on Edwards, Glean. Nat. Hist., p. 99, pl. 256, upp. fig., Surinam.

²Recent reexamination of the series at Tring shows the Amazonian birds to be identical with Guianan skins, and not at all referable to *T. l. rufigastrea*, which is known only from the type.

³Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 303, 1915—Moyobamba, Peru.

(d) *Threnetes leucurus cervinicauda* Gould.¹

Light zone of lateral rectrices light ochraceous buff; upper parts metallic green.

Eastern Colombia, eastern Ecuador, and northeastern Peru (north bank of the Marañón).²

284. *Anopetia gounellei* (Boucard).

Phaethornis gounellei Boucard, The Humming Bird, 1, p. 17, 1891—"Brazilia" (the type examined in the Paris Museum was obtained by the late E. Gounelle at Santo Antonio da Barra, near Cidade da Condeuba, southern Bahia).

Threnetes longicauda Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 301, 1915—Juá, near Iguatú, Ceará.

Phaethornis gounellei Reiser (1), p. 63, 1910—Lagôa Missão near Parnaguá, Piahy.

Phaethornis (Anopetia) gounellei Reiser (2), p. 137, 1925—same locality.

Piahy: Arára, ♀ ad., Jan. 30, 1925.

Ceará: Varzea Formosa, ♂ ad., March 2, 1925.

"Iris black; feet pinkish gray; bill yellow, apical portion black, basal half of lower mandible greenish yellow (male); bill black, with base of lower mandible only greenish yellow (female)."

Additional specimens.—Piahy: Lagôa Missão, near Parnaguá, ♂ ad., June 6, 1913. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., Sept. 2, 1913. R. H. Becker (type of *Threnetes longicauda* Cory); Serra do Castello, adult (unsexed), Aug. 21, 1915. F. Lima (Museu Goeldi, Pará, No. 11456).

Direct comparison of the types revealed the identity of *Threnetes longicauda* and *Phaethornis gounellei*. The species exhibits some individual variation in the coloring of the under parts and bill. In the type and the specimen from Lagôa Missão, Piahy, the rufous extends down to the chest which, in the others, is grayish buff, darkest in the Ceará birds, palest in our female from Arára, Piahy. The upper mandible is as a rule entirely black; but the Vienna Museum

¹*Threnetes cervinicauda* Gould, P. Z. S. Lond., 22, "1854," p. 109, Apr., 1855—Quijos, Ecuador.

²*Threnetes hauxwelli* Boucard (Genera of Humming Birds, p. 371, Aug., 1895—Pebas; type in Paris Museum examined) appears to be inseparable from *cervinicauda*, although the type shows a certain tendency toward the characters of *T. l. rufigaster* in its slightly more buffy under parts. The color of the malar streak emphasized by the describer varies individually. Fontanier's specimen in the Paris Museum mentioned by Simon looks like a Bogotá skin, and certainly did not come from Santa Marta.

example (♂ ad., Lagôa Missão) has the extreme base of the culmen yellowish, and in the adult male sent by Snethlage from Varzea Formosa the entire basal half of the maxilla is soft and bright yellow. The extent of the greenish yellow base to the lower mandible is likewise variable in different individuals.

The peculiarly shaped tail immediately separates this strongly marked species from *Phaethornis* and the allied genera.

A. gounellei is an endemic species of northeastern Brazil, ranging from southern Bahia north to Ceará and Piauhý.

MEASUREMENTS

	Wing	Median rectrix	External rectrix	Bill
♂ ad. Santo Antonio da Barra	49	46½	24	27
♂ ad. Lagôa Missão, Piauhý	49½	49	27	27½
♂ ad. Juá, near Iguatú, Ceará	49	47	25	27½
♂ ad. Varzea Formosa, Ceará	49	46	25	26½
♀ ad. Arára, Piauhý	48	49	25	26

285. *Anisoterus pretrei* (Delattre and Lesson).

Trochilus pretrei Delattre and Lesson, Rev. Zool., 2, p. 20, 1839—Minas Geraes, Brazil.

Phaethornis pretrei Reiser, pp. 63, 137—Parnaguá and near Santa Philomena, Piauhý.

Maranhão: Grajahú, two ♂♂ ad., Oct. 18, 22, 1924.

• Piauhý: Arára, ♂ ad., Feb. 7, 1925.

Ceará: Varzea Formosa, ♂ ad., Feb. 23, 1925.

"Iris black, feet grayish pink, bill black, lower mandible red."

Additional specimen.—Piauhý: Parnaguá, ♂ ad., May 31, 1903. O. Reiser (Vienna Museum).

Identical with specimens from Minas Geraes, Bahia (São Marcello, Rio Preto), and Matto Grosso.

A. pretrei is a representative of the central-Brazilian fauna. Its range extends throughout the campo region from Maranhão, Piauhý, and Ceará south to Minas Geraes and São Paulo, stretching west across Matto Grosso to the base of the Andes in eastern Bolivia.

Bolivian specimens which were separated both by Boucard¹ and Todd² I am unable to distinguish satisfactorily. They are perhaps

¹*Phaethornis garleppi* Boucard, The Humming Bird, 3, p. 9, 1893—Bueyes, near Santa Cruz de la Sierra, Bolivia (type in Paris Museum examined).

²*Phaethornis subochraceus* Todd, Proc. Biol. Soc. Wash., 28, p. 170, 1915—Santa Cruz de la Sierra, Bolivia (type in Carnegie Museum examined). The author, in his diagnosis of two lines, does not refer to *A. pretrei* at all, but compares his

of a slightly purer, less golden green above, and average rather paler, less tawny underneath, but the variation is insignificant. I have examined four specimens from Bueyes, two from Samaipata, and one from Santa Cruz de la Sierra.

286. *Pygmornis nattereri* (Berlepsch).

Phaethornis nattereri Berlepsch, Ibis, (5), 5, p. 289, 1887—Engenho do Gama and Caiçara, western Matto Grosso; Reiser, pp. 63, 138—Barra do Cocal, Rio Parnahyba, Piahy.

Maranhão: Barra do Corda, ♀ ad., Sept. 22, 1924.—“Bill black, mandible at base yellow.”

Additional specimen.—Piahy: Barra do Cocal, Rio Parnahyba, ♂ ad., Aug. 31, 1903. O. Reiser (Vienna Museum).

Compared with the original series, the two birds are somewhat more deeply colored beneath and have an indistinct dark subapical band on the lateral rectrices, hardly noticeable in Natterer's examples. A recently collected specimen from Tapirapoan, Siputuba River, Matto Grosso, Jan. 19, 1914, G. K. Cherrie, in the American Museum of Natural History (No. 127388), however, differs from the Barra do Corda bird only by its paler throat.

P. nattereri, one of the rarest humming-birds in collections, so far has been recorded only from Matto Grosso (Engenho do Gama, Caiçara, Chapada,¹ Tapirapoan), Piahy (Barra do Cocal), and Maranhão (Barra do Corda).

MEASUREMENTS

	Wing	Median rectrix	External rectrix	Bill
♂ ad. Engenho do Gama, Matto Grosso (type of species)	45	41	18	23½
♂ ad. Caiçara, Matto Grosso	45	47	21	24½
♀ ad. Tapirapoan, Matto Grosso	44	47	19	24
♂ ad. Barra do Cocal, Piahy	44	49	20½	24
♀ ad. Barra do Corda, Maranhão	44	41	20	23

287. *Pygmornis ruber ruber* (Linnaeus).

Trochilus ruber Linnaeus, Syst. Nat. 10th ed., 1, p. 121, 1758—based on “The Little Brown Humming-Bird” Edwards, Nat. Hist. Uncom. Birds, 1, p. 32, pl. 32, upp. fig., Surinam.²

bird with *P. squalidus* which has no relation to the present species and belongs, in fact, to a different genus. E. Simon (Hist. Nat. Trochil., p. 256, 1921) was thereby misled to associate *P. subochraceus* subspecifically with *P. squalidus*.

¹*Pygmornis chapadensis* Allen, Bull. Amer. Mus. Nat. Hist., 5, p. 122, 1893.

²In spite of the late E. Simon's (Hist. Nat. Trochil., p. 261, note 5, 1921) objections I still maintain that Edwards's figure of the “Little Brown Humming-bird” cannot refer to any other than the present species. Shape and markings of the

Phaethornis pygmaeus Reiser, pp. 63, 138—Queimadas, Rio Parnahyba, Piauhý.

Piauhý: Deserto, ♂ ad., Apr. 2, 1925.—Wing 29; tail 26; bill 22.

Additional specimen.—Piauhý: Queimadas, Rio Parnahyba, ♀ ad., Sept. 2, 1903. O. Reiser (Vienna Museum).

A widely distributed species, ranging from Dutch and French Guiana through Lower Amazonia and the greater part of Brazil south to São Paulo and Matto Grosso.

[288. *Campylopterus obscurus obscurus* Gould.

Campylopterus obscurus Gould, P. Z. S. Lond., 16, p. 13, 1848—"River Amazon"—Pará (type in British Museum examined); Simon, Hist. Nat. Troch., pp. 29, 265, 1921—Miritiba, Maranhão; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 66, 1926—Tury-assú, Maranhão.

Maranhão: Miritiba, ♂ ♀ ad., F. Schwanda (Coll. E. Simon).

Two specimens in the late Eugène Simon's collection agree with others from Pará, but have the grayish tips to the lateral rectrices on average slightly more extended.

A Lower-Amazonian form ranging from Pará to northern Maranhão.]

289. *Eupetomena macroura simoni* subsp. nov.

Eupetomena macroura (not *Trochilus macrourus* Gmelin) Reiser, pp. 63, 138—Varzea Grande, near Santo Antonio de Gilboez and above Colonia Floriano, Piauhý.

Maranhão: Codó, Cocos, ♂ ad., July 6, 1924; Barra do Corda, two ♂♂ imm., Aug. 31, Sept. 1, 1924.

Piauhý: Arára, ♂ ad., ♀ ad., Jan. 21, 22; Ibiapaba, ♂ ad., Jan. 3, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, fifteen adults and young of both sexes, Aug., 1913; Serra de Baturité, ♀, July 20, 1913. R. H. Becker.

Type from Rio do Peixe, near Queimadas, state of Bahia, Brazil, in Field Museum of Natural History. No. 45774. Adult male. November 28, 1913. R. H. Becker.

Characters.—Similar to *E. m. macroura*, of Cayenne, etc., but back and posterior under parts decidedly *bluish* green instead of

tail as well as the presence of a dusky band across the chest clearly point to the bird later described by Spix as *T. pygmaeus*, and at the same time exclude *P. longuemarei*.

golden or bronze green, this bluish sheen being particularly noticeable on the interscapular region and abdomen; blue of the head more violaceous; lateral rectrices more attenuated and apically more acuminate. Wing (of type) 75; tail (outermost rectrix) 97; bill 22.

Range.—Northeastern Brazil, in the states of Bahia, Pernambuco, Ceará, Piauí, and Maranhão.

The late Eugène Simon¹ was the first to properly discriminate the three geographic races of the Swallow-tailed Humming-bird, but I am unable to concur in his nomenclature. By describing *E. m. prasina* he simply renamed true *macroura*, as I shall presently show.

Trochilus macrourus Gmelin,² described as "*Tr. viridi-aureus*, capite et gutture violaceis, abdominis area alba, cauda bifurca chalybea," with "habitat in Jamaica," was based on the accounts of Brisson, Sloane, Marcgrave, Buffon, and Latham. The first and the last of these references describe the Swallow-tailed Humming-bird of Cayenne, and Buffon, who fails to specify any locality, most likely had a specimen of the same origin before him. Marcgrave, the explorer of northeastern Brazil, however, no doubt referred to the form for which I here propose the name *E. m. simoni*. Finally, Sloane gives a good description and figure of the Jamaican *Trochilus* (*Aithurus*) *polytmus*. Gmelin's diagnosis, in spite of the habitat "Jamaica" borrowed from Sloane, clearly applies to the South American Swallow-tailed Humming-bird, and since the term "viridi-aureus" exactly corresponds to the characters of the Guianan form on which, besides, the majority of the other quotations were based, we formally designate Cayenne (ex Brisson) as type locality of *T. macrourus* Gmelin.³

E. m. macroura, with golden green back and abdomen, and relatively wider, less acuminate lateral rectrices, ranges from the Guianas south to the islands in the delta of the Amazon, and through Lower Amazonia and Goyaz, down to western Minas Geraes, São Paulo, and northern Paraguay. Specimens from the interior of Brazil (Goyaz; campos of Diamantina and Agua Suja, near Bagagem, Minas Geraes; Matto Grosso; São Paulo) and Paraguay (Villa Concepción) are absolutely identical with a Guianan series as far as I can see.

¹Cat. Fam. Trochilidae, p. 9, 1897.

²Syst. Nat. I, (I), p. 487, 1788.

³*Trochilus forcipatus* Latham (Ind. Orn., I, p. 304, 1790—Cayenne) and *Ornis-mya hirundinacea* Lesson (Hist. Nat. Ois. Mouch., p. xii, 98, pl. 25, 1829—new name for *Trochilus macrourus* Gmelin) are mere synonyms.

E. m. simoni, on the other hand, appears to be restricted to the northeastern states of Brazil, extending south to the vicinity of Bahia City. In addition to the series listed above, we have a number of specimens from Santo Amaro and Rio do Peixe, near Queimadas, Bahia, and I have also examined many Bahia trade skins.

I take much pleasure in naming this well-marked race in commemoration of Eugène Simon to whom science is indebted for an excellent treatise on the Humming-bird family.

290. *Florisuga mellivora mellivora* (Linnaeus).

Trochilus mellivorus Linnaeus, Syst. Nat., 10th ed., I, p. 121, 1758—based on Edwards, Surinam.

Maranhão: Tury-assú, ♂ ad., Nov. 20, 1923; Rosario, ♂ ad., May 2, 1924.

Widely distributed throughout central and northern South America. The present specimens extend its known range in the east from the lower Amazon to northern Maranhão.

291. *Anthracothorax nigricollis nigricollis* (Vieillot).¹

Trochilus nigricollis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 7, p. 349, 1817—Brazil.

Lampornis nigricollis Reiser, pp. 64, 140—São Gonçalves and Queimadas, Rio Parnahyba, Piahy.

Maranhão: Tranqueira, ♂ ad., ♂ juv., and an unsexed immature bird in female plumage, Sept. 7, 8, 1925.

Widely diffused in South America, from Panama down to Paraguay, northeastern Argentina, and southern Brazil. Rather rare in the northeastern states of Brazil.²

292. *Avocettula recurvirostris* (Swainson).

Trochilus recurvirostris Swainson, Zool. Illust., 2, pl. 105, 1822—"Peru" (errore) = Cayenne (see Berlepsch, Nov. Zool., 15, p. 264, 1908).

¹Mathews (Austr. Av. Rec., 3, p. 42, 1915), who sought to revive the name *Trochilus violicauda* Boddaert (Tabl. Pl. Enl., p. 41, 1783—based on Daubenton, Pl. Enl. 671, fig. 2, Cayenne) for the above species, appears to have entirely overlooked Count Berlepsch's critical remarks in Journ. Orn., 32, p. 309, 1884, where its identity with *A. gramineus* (= *viridigula* Bodd.) has been conclusively pointed out. In my mind, there cannot be the slightest doubt that Daubenton's figure represents a female of that species which is of common occurrence in French Guiana, where *A. nigricollis* has yet to be discovered.

²E. Simon (Hist. Nat. Troch., p. 274, 1921) includes Maranhão in the range of *Anthracothorax viridigula* (Boddaert), without giving any details, and while it is quite possible that this species, like so many other Lower-Amazonian types, extends into that state, I am rather reluctant to include it in the list without further evidence.

Maranhão: Tury-assú, ♂ ad., Nov. 3, 1923; Tranqueira, Rio Mojú, ♀ ad., Sept. 8, 1925.

♂ ad.—Wing 58; tail 29; bill 18.

♀ ad.—Wing 57; tail 30; bill 17.

A species endemic to the Guianas and Lower Amazonia, for the first time recorded from Maranhão. The male agrees with another from French Guiana.

293. *Chrysolampis elatus* (Linnaeus).

Trochilus elatus Linnaeus, Syst. Nat., 12th ed., 1, p. 192, 1766—based on Edwards, Glean. Nat. Hist., 3, p. 280, pl. 344, upper fig., Cayenne.

Chrysolampis mosquitus (not *Trochilus mosquitus* Linnaeus)¹ Reiser, pp. 64, 140—Parnaguá, Santa Philomena, and Therezina, Piauhý.

Maranhão: São Bento, ♂ ad., ♂ imm., Sept. 7, 10, 1923; São Luiz, ♂ ad., Aug. 20, 22, 1923; Tranqueira, three (♀ ♀) ad., Sept. 7, 9, 10, 1925.

Piauhý: Ibiapaba, ♂ ad., Jan. 14; Arára, ♀ ad., Jan. 23, 1925.

Additional specimens.—Ceará: Quixada, ♂ ad., July 1, 1913; Juá, near Iguatú, two ♀ ♀ ad., Sept. 2, 4, 1913. R. H. Becker.

A species of wide distribution, ranging south to Rio, Minas Geraes, and Matto Grosso.

294. *Lophornis gouldii* (Lesson).

Ornismya gouldii Lesson, Hist. Nat. Troch., p. 103, pl. 36, 1832—locality unknown.

Maranhão: Tury-assú, Alto de Alegria, ♂ juv., Nov. 21, 1923.

Goyaz: Santo Antonio (Bôa Vista), ♀ or ♂ juv., Jan. 29, 1926.

Although no adult males were secured, there can be hardly any doubt that these birds are referable to *L. gouldii* whose range is known to extend along the south bank of the Amazon from Matto Grosso to Pará.

295. *Chlorostilbon aureoventris pucherani* (Bourcier and Mulsant).²

¹See Berlepsch, Nov. Zool., 15, p. 264, 1908.

²E. Simon (Hist. Nat. Troch., p. 294, 1921) is certainly mistaken in referring *Ornismya prasina* Lesson (Hist. Nat. Ois.-Mouch., p. 188, pl. 65, 1830) to this species. The passages "bec noir" and "la queue est très légèrement arrondie," well shown in the plate, clearly point to its being an earlier name for *Chlorostilbon brevicaudatus* Gould, of Cayenne. Our deceased friend was probably influenced by the locality, supposedly given as Brazil, but errors in that respect are frequent throughout Lesson's writings.

Trochilus pucherani Bourcier and Mulsant, Rev. Zool., 11, p. 271, 1848—Brazil; we suggest Rio de Janeiro.

Chlorostilbon aureiventris pucherani Reiser, pp. 64, 139—Santa Philomena and Therezina, Piahy.

Maranhão: Barra do Corda, ♂ juv., Sept. 1, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 31, 1925; Tranqueira, two ♂ ♂ ad., Aug. 25, 29, 1925.

Piahy: Arára, two ♂ ♂ ad., two ♀ ♀ ad., Jan. 30, Feb. 1, 3, 7, 1925; Ibiapaba, ♂ ad., ♂ imm., Dec. 22, 1924, Jan. 14, 1925.

Ceará: Varzea Formosa, ♂ ad., ♀ ad., Feb. 23, March 5, 1925.

Additional specimens.—Piahy: Therezina, ♂ ad., Aug. 18, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ten ♂ ♂ ad., three ♂ ♂ juv., one ♀ ad., July and August, 1913. R. H. Becker.

The adult males, like a large series from Bahia, differ from Rio specimens by having a more emerald green, less bluish throat, though there is much individual variation, and a good many are indistinguishable.

C. p. pucherani is a species of eastern Brazil, whose range extends, as will be shown below, from Maranhão, Piahy, and Ceará through Goyaz, Bahia, and Minas Geraes south to São Paulo and Paraná.

The nomenclature of these little green Humming-birds is involved in great confusion. *T. pucherani*—the earliest name we have to deal with—was based on three specimens without any other locality than "Brésil." While the two "males" have disappeared, the marked "female" type¹ still exists in the Paris Museum. It is a young male, with but a few glittering bluish green feathers on the throat, the rest of the under parts being pale grayish, and agrees with the original description of the "female" in having the under tail coverts apically fringed with rufescent. In size, it is an exact duplicate of males from Rio de Janeiro in corresponding plumage (wing 50; tail 29; bill 15), and we may, therefore, take Rio de Janeiro as type locality of *T. pucherani*.²

¹Its label reads: "No. 4987. *Chlorostilbon pucherani* (B. & M.). ♀. Type. Brésil. Acquis en 1839."

²Mons. Simon (l. c., p. 294) cites *T. phaelon* Bourcier and Mulsant (Rev. Zool., 11, p. 273, 1848—locality unknown) as a synonym of his *C. prasinus* (rectius *C. a. pucherani*), but here again I must differ from this high authority. Apart from the improbability that Bourcier and Mulsant should have described the same species twice in the same paper, the characters of both upper and under parts agree much better with *C. a. aureiventris* (Lafr. and d'Orb.). Moreover, one of the typical examples of the latter species in the Paris Museum is marked "*T. phaelon* B. et M." by Bourcier himself, and in the absence of the actual type, I think we may well accept his later identification of his own species.

The type of *Chlorostilbon wiedi* Boucard,¹ which I have examined in the Paris Museum, is a Rio trade skin, so this name becomes a pure synonym of *T. pucherani*.

Chlorostilbon egregius Heine,² based on two adult males from Minas Geraes in the Berlin Museum, was misapplied by Berlepsch, Hartert, and Simon to the large form of Rio Grande do Sul. Careful study of the types courteously lent by Dr. E. Stresemann, together with other material, however, shows the inhabitants of Minas Geraes, Goyaz, São Paulo, and Paraná to be so close to *C. a. pucherani* that I do not attempt to separate them. In color, they are exactly the same, and their slightly larger dimensions, the only point of difference, seem hardly sufficient for subspecific distinction.

Eight adult males from Rio Grande do Sul, on the other hand, have decidedly longer as well as stouter bills, and their wings are also somewhat longer. In coloration, they do not seem to differ from more northern examples and agree notably with *C. a. pucherani* in the presence of a glittering shield on the anterior part of the crown, which distinguishes them immediately from *C. a. aureoventris*. This evidently separable form may well remain unnamed, until its relationship to the birds found in Uruguay and adjacent districts of Argentina, whence no material is available, can be established.

C. a. aureoventris (Lafr. and d'Orb.)³ replaces the preceding forms in Paraguay, Matto Grosso, western Argentina, and Bolivia. With an ample series from both Bolivia and Tucumán before me, I am unable to appreciate the characters of *C. aureoventris tucumanus* Simon.⁴

296. *Thalurania furcata furcatoides* Gould.⁵

Thalurania furcatoides Gould, Introd. Troch., p. 77, 1861—"Pará and the lower part of the Amazon."

¹Genera of Humming Birds, p. 120, 1894—"Brazil."

²Journ. Orn., 11, p. 197, 1863—São João d'El Rey, Minas Geraes.

³*Ornismya aureo-ventris* Lafresnaye and d'Orbigny, Syn. Av., 2, in Mag. Zool., 8, cl. 2, p. 28, 1838—type from Cochabamba, Bolivia in Paris Museum examined.

⁴Hist. Nat. Troch., p. 65, 1921—Tucumán.

⁵I am not prepared to follow E. Simon (Hist. Nat. Troch., p. 303, 1921) in calling this form *T. f. gyrrinno*. Reichenbach's *Coeligena gyrrinno* (Handb. Spez. Orn., Troch. Enum., p. 3, pl. 683, figs. 4500-4501, 1855—Guiana) is much more likely to have been based on Cayenne examples of true *T. f. furcata*.

Thalurania forficata Cabanis and Heine (Mus. Hein., 3, p. 24, 1860—"Pará"), employed by the same authority in place of *T. f. fissilis*, is likewise a synonym of *T. f. furcata*. The type in the Heine Collection, which I have carefully compared in the company of the late Count Berlepsch, is a Cayenne skin, and in proportions (wing 54; tail 46½) does not differ from other specimens collected in French Guiana.

Maranhão: Tury-assú, two ♀ ♀ ad., Oct. 23, Dec. 6, 1923; Anil, near São Luiz, ♂ vix ad., Aug. 4, 1923.

Additional specimens.—Maranhão: São Luiz, two ♂ ♂ ad. (Sophia Museum); Miritiba, two ♂ ♂ ad., two ♂ ♂ imm., three ♀ ♀ ad., F. Schwanda (Munich Museum).

Specimens from the forested coast region of Maranhão agree with a topotypical Pará series. The characters of this rather unsatisfactory race I have discussed in my report on the ornithological results of L. Müller's expedition to the delta of the Amazon.¹

T. furcata furcatoides is apparently restricted to the eastern section of Pará, east of the Tocantins, and the adjoining districts of northern Maranhão.

297. *Thalurania furcata baeri* Hellmayr.

Thalurania eriphile baeri Hellmayr, Bull. Brit. Orn. Cl., 21, p. 27, 1907—Goyaz City, Goyaz; Reiser (2), p. 140, 1925—upper Rio Parnahyba.

Thalurania eriphile (not of Lesson) Reiser (1), p. 64, 1910—opposite Barra do Galiota, Maranhão, and Santa Philomena and mouth of the Sucuriú, Alto Parnahyba, Piahy.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 27, 1925; Tranqueira, eight ♂ ♂ imm., three ♀ ♀ ad., Aug. 17, 26, 28, 29, 31, Sept. 7, 8, 9, 13, 1925.

Additional specimen.—Piahy: mouth of the Sucuriú, Rio Parnahyba, ♂ ad., July 24, 1903. O. Reiser (Vienna Museum).

The birds from the upper Parnahyba, while agreeing with a series from Matto Grosso in the shining golden green anterior crown which, in *T. f. furcatoides*, from Pará and the coast of Maranhão, when viewed from in front, appears almost blackish, show a decided tendency to the characters of the latter form in the more heavily spotted under tail coverts. In a good many examples, however, they are plain (unspotted) white as in Goyaz and Matto Grosso birds. An adult male from the mouth of the Sucuriú in the Vienna Museum is not distinguishable from topotypes of *baeri*. The only adult male in the present series, from Fazenda Inhuma, however, by distinct dusky streaks on most of the under tail coverts and an almost uninterrupted (though narrow) violet interscapular band, closely approaches certain specimens of *T. f. furcatoides*, from the Pará region.

Intergradation being thus plainly indicated, it becomes necessary to reduce the hitherto specifically separated *T. eriphile*-group to subspecific rank.

¹Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 54, 1912.

T. furcata baeri is evidently the inland representative of *T. f. furcatoides*, ranging from the upper Parnahyba in states of Maranhão and Piauí south through western Bahia¹ to Goyaz and extending west to Matto Grosso. Farther south, in Minas Geraes, Rio de Janeiro, and São Paulo, it is replaced by the much larger *T. furcata eriphile* (Lesson), while other allied races are found in the Amazon Valley.

298. *Chlorestes notatus* (Reich).

Trochilus notatus Reich, Magaz. Thierr., 1, (3), p. 129, 1795—based on Richard and Bernard, Cat. Ois. Envoyés de Cayenne par M. Le Blond in Act. Soc. Hist. Nat. Paris 1, (1), p. 117, No. 48, 1792, Cayenne.

Maranhão: Tury-assú, two ♂♂ ad., Nov. 7, 1923.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Feb. 9, 1926.

Identical with a series from Cayenne and Pará. Birds from Bahia, where the species in the east reaches the southern limit of its range, generally have shorter bills, more golden green upper parts, and the blue chin spot more sharply defined, though a good many are indistinguishable. I find much variation in the length of the bill, which in Cayenne examples ranges from 15 to 18 mm., and therefore doubt the possibility of separating the western race *C. n. puruensis*, proposed by Riley.²

299. *Hylocharis cyanus viridiventris* Berlepsch.

Hylocharis cyanus subsp. *viridiventris* Berlepsch, Ibis, (4), 4, p. 113, 1880—"Venezuela (Mérida), Trinidad [errore] and the Orinoco-district."

Maranhão: Tury-assú, Alto de Alegria, two ♂♂ ad., Nov. 8, 19, 1923.

These specimens are referable to the northern form with deep bluish green abdomen, and agree with others from British Guiana and Venezuela.

The range of this race, known to comprise Venezuela,³ the Guianas, and the adjacent section of northern Brazil (Pará region), is thus seen to extend to northern Maranhão. In the littoral of southeastern Brazil, from Bahia down to São Paulo, it is replaced by *H. cyanus cyanus* (Vieillot), and in Upper Amazonia, from Peru to western Matto Grosso, by *H. cyanus rostrata* Boucard.

¹Field Museum has an adult male from São Marcello, Rio Preto, secured by R. H. Becker on March 25, 1914.

²Proc. Biol. Soc. Wash., 28, p. 183, 1915—Hyutanahan, Rio Purús, Brazil.

³Trinidad is sometimes, but erroneously, included in its habitat.

300. *Polytmus guainumbi thaumantias* (Linnaeus).

Trochilus thaumantias Linnaeus, Syst. Nat., 12th ed., 1, p. 190, 1766—based on "Polytmus" Brisson, Orn., 3, p. 667, ex Marcgrave, Brazil; we suggest Sergipe.¹

Polytmus thaumantias Reiser, pp. 65, 140—Santa Quiteria, Rio Parnahyba, Maranhão.

Maranhão: São Bento, ♂ ad., Sept. 11, 1923; Tranqueira, ♂ ad., Sept. 9, 1925.—Wing 62, 64; tail 39, 43; bill 23, 24.

I find it rather difficult to distinguish the several local races into which this species has been divided by authors. If there is more than one form, it appears that the range of *P. g. guainumbi* (Pallas)² should be restricted to Trinidad, Venezuela, and the Guianas.³

Birds from Brazil, Bolivia, and Paraguay differ by reason of larger size, longer bill, and less white on the lateral rectrices, and may be separated under Linnaeus's name.

The two males secured by Dr. Snethlage are extremely typical of this form, and compare well with examples from Bahia, Goyaz, and Matto Grosso.

301. *Agyrtrina fimbriata nigricauda* (Elliot).

Thaumantias nigricauda Elliot, Ibis, (4), 5, p. 47, 1878—"Trinidad, British Guiana, and Cayenne; Bahia" (the types in the American Museum of Natural History, New York are Bahia skins).

Agyrtria nigricauda Reiser, pp. 63, 139—Parnaguá, Piahy.

Maranhão: São Bento, ♂ ad., Sept. 10, 1923; Grajahú, ♀ ad., Oct. 20, 1924; Tranqueira, ♂ ad., ♀ ad., Sept. 9, 10, 1925.

Piahy: Deserto, ♂ ad., ♂ imm., and one (unsexed) immature, March 30, Apr. 1, 1925.

Additional specimens.—Piahy: Parnaguá, ♂ ad., May 15, 1903. O. Reiser (Vienna Museum).—Ceará: Serra de Baturité, ♀ ad., July 19, 1913. R. H. Becker.

¹Berlepsch (Nov. Zool., 15, p. 264, 1908) suggested Bahia, which we propose to correct as above, since Marcgrave is not known to have traveled south of Sergipe. With the exception of Seba, all the references quoted by Brisson go back to Marcgrave's account, and the only specified locality is "Brésil."

²*Trochilus guainumbi* Pallas in Vroeg's Catalogue, Adumbrat., p. 2, No. 60, 1764—"Cabo de Goede Hoop," errore; Surinam substituted as type locality (auct. Richmond, Smiths. Misc. Coll., 47, pp. 334, 344, 1905).

³*Polytmus thaumantias andinus* Simon (Hist. Nat. Troch., pp. 101, 316, 1921—"savane de Bogotá") is probably not separable. However, I have but a few specimens for comparison.

⁴In spite of Simon's objection (Hist. Nat. Troch., p. 327, note 5), Reichenbach's note (Aufz. Colib., 1854, p. 6) leaves no doubt that *Agyrtria* was proposed merely as a substitute for *Thaumantias* Bonaparte. I do not see how *Chionomesa* Simon can be separated from *Agyrtrina* Chubb.

The adult birds agree in coloration of tail and wholly white under tail coverts with a series from various parts of Bahia (Itapicurú and Rio do Peixe, near Queimadas; Macaco Secco, near Andarahy). Specimens from central Brazil (Goyaz, western Minas Geraes, northern São Paulo, Matto Grosso) and eastern Bolivia (Mojos), as a rule, have the median rectrices more strongly washed with bronze green, and the lateral ones more decidedly tipped with grayish,¹ though the variation is slight and not quite constant. How far this form extends to the north, I am unable to ascertain owing to lack of material from the Pará region. The few specimens seen by me from the Tapajóz River appear to be intermediate between *nigricauda* and *fimbriata*, the latter being the form found on the north bank of the Amazon and thence ranging to Guiana and Venezuela.

302. *Agyrtrina leucogaster leucogaster* (Gmelin).

Trochilus leucogaster Gmelin, Syst. Nat., 1, (1), p. 495, 1788—based on Brisson, Buffon, etc.;² Cayenne (ex Brisson) designated as type locality (auct. Berlepsch, Nov. Zool., 15, p. 265, 1908).

Agyrtria leucogaster bahiae (not of Hartert) Reiser, pp. 63, 139—coast of Piahy = Amaração, delta of the Rio Parnahyba.

Maranhão: Tury-assú, two ♂♂ ad., ♀ ad., ♀ imm., Oct. 3, 6, 10, 1923; São Luiz, ♀ ad., ♀ imm., Aug. 13, 1925.—Wing 52-53; bill 20-22 mm.

Additional specimen.—Piahy: Amaração, ♂ ad., Sept. 14, 1903. O. Reiser (Vienna Museum).

In dimensions, these birds agree with a series from French Guiana, but have less green at the base of the lateral rectrices. In the latter point, they approach *A. leucogaster bahiae* (Hartert),³ which, however, is larger, with a somewhat stouter, longer bill.⁴ The distinction of the two races is somewhat questionable, but if they be maintained, then the birds from the coast of Maranhão and Piahy have to be ranged with the typical form, restricting *A. l. bahiae* to eastern Brazil, from Pernambuco to Bahia.

303. *Agyrtrina versicolor nitidifrons* (Gould).

Thaumatias nitidifrons Gould, P. Z. S. Lond., 1860, p. 308—locality unknown; we suggest Pará (type in British Museum examined).

¹See Hellmayr, Nov. Zool., 15, pp. 74-75, 1908; Simon, Bull. Mus. Hist. Nat. Paris, 18, pp. 500-501, 1912.

²The reference to Marcgrave possibly belongs to *A. leucogaster bahiae*.

³*Agyrtria leucogaster bahiae* Hartert, Orn. Monatsber., 7, p. 140, 1899—Bahia.

⁴Not smaller, as stated in the original description.

Agyrtia nitidifrons Reiser, pp. 63, 139—Santa Philomena, Piauh.

Goyaz: Santo Antonio (Bôa Vista), lower Tocantins, ♀ ad., Jan. 28, 1926.

Maranhão: Tranqueira, four ♂♂ ad., Sept. 3, 7, 8, 9, 1925; Fazenda Inhuma, Alto Parnahyba, three ♂♂ ad., ♀ ad., July 18, 24, 31, 1925.

Piauh: Deserto, ♂ ad., Apr. 3, 1925; Arára, two ♂♂ ad., Jan. 31, Feb. 9, 1925.

Ceará: Varzea Formosa, ♂ ad., March 3, 1925.

"Iris and feet black, bill black, basal portion of lower mandible pink or red."

♂♂.—Wing 49-53; tail 29-31; bill 15-17.

♀♀.—Wing 46, 47; tail 27, 28; bill 15, 17.

Additional specimen.—Piauh: Santa Philomena, ♀ juv., July 16, 1903. O. Reiser (Vienna Museum).

This interesting series demonstrates complete intergradation with *A. v. versicolor* (Vieillot),¹ from southern and central Brazil. A good many of the adult males, notably Nos. 1612 (Deserto), 1475 (Arára), 1500 (Arára), and 1567 (Varzea Formosa), are indistinguishable from Pará specimens, having an extensive glittering bluish green frontal shield, the throat largely spotted with the same color, and the lateral rectrices crossed by a prominent subapical band of blackish. In others, the frontal shield as well as the sides of the head and the spotting on the throat are glittering golden green, with a hardly perceptible bluish sheen, about the same shade as the crown of *A. milleri* (Bourc.). Finally, two males from Maranhão (Nos. 1885, Tranqueira; No. 1675, Fazenda Inhuma) lack the compact frontal shield, the entire crown being bronze green, with but a few glittering golden green feathers interspersed, and closely resemble the southern *A. v. versicolor*. The distinct subapical tail band holds in most cases, though in two or three specimens from Maranhão it is barely suggested and not more pronounced than in *A. v. versicolor*.

A. v. nitidifrons is obviously a northern representative of *A. v. versicolor*, with a comparatively restricted range that extends from Ceará through Piauh and Maranhão west to the lower Tocantins, Pará.²

¹*Trochilus versicolor* Vieillot, 1818 replaces *Thaumatias affinis* Gould, 1855. See Simon and Hellmayr, Nov. Zool., 15, p. 1, 1908.

²In Brazil (north of the Amazon), Venezuela, and eastern Colombia another near relative, *A. v. milleri* (Bourc.), with much whiter under parts takes its place. *A. milleri laglaizei* Simon (Hist. Nat. Troch., pp. 113, 328, 1921—San Fernando

304. *Heliothrix auritus phaïnolaema* Gould.

Heliothrix phaïnolaema Gould, P. Z. S. Lond., 23, p. 87, 1855—"Rio Napo," errore (the type in the British Museum is marked "Pará").

Maranhão: Tury-assú, ♂ juv., Oct. 25, 1923.

A Lower-Amazonian form ranging east into northern Maranhão. About its characters consult Nov. Zool., 12, pp. 297-298, 1905.

From Bahia and Goyaz southwards, it is replaced by *H. a. auriculatus* (Nordmann).¹

305. *Heliactin bilophum* (Temminck).

Trochilus bilophus Temminck, Nouv. Rec. Pl. Col., livr. 3, pl. 18, fig. 3, Oct., 1820—"Brésil" = Fazenda Valo, interior of Bahia, near frontier of Minas Geraes.²

Heliactin bilophum Reiser, pp. 65, 141—Santo Antonio de Gilboez and Corrientes, Rio Parnahyba, Piauhý.

Maranhão: Tranqueira, ♂ ad., Sept. 2, 1925.

A species of the central campo region, ranging from Matto Grosso, northern São Paulo, and western Minas Geraes north to Maranhão and Piauhý.

306. *Anthoscenus longirostris longirostris* (Audebert and Vieillot).

Trochilus longirostris Audebert and Vieillot, Ois. Dorés, 1, livr. 10, p. 107, pl. 59, 1801—"Indes occidentales" = Trinidad (see Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 7, p. 366, 1817).

Maranhão: Grajahú, two ♂ ad., Oct. 31, 1924; Tranqueira, ♂, ♀ ad., Aug. 22, Sept. 10, 1925.

The males are just assuming the glittering shield on the anterior portion of the crown.

The present specimens extend the range of the species from the lower Tocantins to Maranhão. The species is widely distributed in South America, north of the Amazon.

(de Apure, Venezuela), the type of which I have examined in the Simon Collection, appears to me inseparable. On the other hand, *A. nitidifrons meracula* Simon (l. c., pp. 114, 329), based on two specimens from the "Rio Napo" in the Paris Museum, is probably a valid race, much more closely related to *milleri*, however, than to *nitidifrons*. The locality is perhaps open to doubt.

¹Simon (Hist. Nat. Troch., pp. 214-215, 389) splits the east-Brazilian birds into two races, *H. a. auriculatus* (Rio to Paraná) and *H. a. poucheti* (Bahia, Goyaz, and Upper Amazonia). I have not seen any adult males from either Bahia or Goyaz, but those from Calama, Rio Madeira, and Peru, which Simon—apparently without having seen them—refers to the northern form, are indistinguishable from Rio specimens (topotypical *auriculatus*).

²See Wied, Reise Bras., 2, pp. 190, 343, 1821.

In southern Brazil, from Goyaz and Bahia to São Paulo, it is apparently replaced by *L. squamosus* (Temm.).

307. ***Calliphlox amethystina*** (Boddaert).

Trochilus amethystinus Boddaert, Tabl. Pl. Enl., p. 41, 1783—based on Daubenton, Pl. Enl. 672, fig. 1, Cayenne.

Calliphlox amethystina Reiser, pp. 65, 141—Santa Philomena, Piauhý and opposite Barra do Galiota, Maranhão.

Maranhão: Tury-assú, ♂ ad., Oct. 3, 1923; Tranqueira, ♂ ad., Sept. 8, 1925; Fazenda Inhuma, Alto Parnahyba, ♂ juv., July 31, 1925.

I cannot make out any geographic races of this species whose range comprises the greater part of South America, east of the Andes, from Venezuela and Guiana south to Matto Grosso, Paraná, and Misiones.

Catharma orthura (Lesson), the type of which I have examined in the American Museum of Natural History (Coll. Elliot), was based on the young male, as is conclusively shown by a series from San German de Upata, Venezuela, in the collection of the Carnegie Museum. Two specimens (Nos. 34261, 34206) are just in the process of molting from the "*orthura*" stage, with short, square, white-tipped rectrices, into the adult plumage, with elongated, acuminate, lateral tail feathers.

[308. ***Chaetura andrei meridionalis*** Hellmayr.

Chaetura andrei meridionalis Hellmayr, Bull. Brit. Orn. Cl., 19, p. 63, 1907—"Santiago, Argentina" = Isca-Yacú, Prov. Santiago del Estero; Reiser, pp. 62, 136—Lagôa do Purgatorio, Riacho d'Ardeia, and Santa Philomena, Piauhý.

Piauhý: Lagôa do Purgatorio, ♂ ad., May 10, 1903; Riacho d'Ardeia, ♀ ad., July 10, 1903; Santa Philomena, ♀ ad., Aug. 14, 1903. O. Reiser (Vienna Museum).

Birds from Brazil appear to be inseparable from a series of Argentina skins.

This Spine-tailed Swift ranges from southern Piauhý south to São Paulo and Matto Grosso, Paraguay, and northern Argentina.]

[309. ***Streptoprocne biscutata*** (Sclater).

Chaetura biscutata Sclater, P. Z. S. Lond., 1865, p. 609, pl. 34—type from Ipanemá, São Paulo, Brazil; Reiser, pp. 62, 136—Burity and Lake Parnaguá, Piauhý.

Piauhy: Burity, near Parnaguá, two ♂♂ ad., one ♀ ad., June 4, 1903; Lake Parnaguá, ♀ ad., June 18, 1903. O. Reiser (Vienna Museum).

Except for slightly shorter wings (190-195, against 198-208 mm.) the Piauhy birds agree with others from Rio de Janeiro, São Paulo (Ipanemá), and Rio Grande do Sul (Taquara do Mundo Novo).

S. biscutata differs from the allied *S. z. zonaris* (ten specimens from Rio de Janeiro and São Paulo) by the white collar being widely interrupted on the sides of the neck; pale brownish forehead; the presence of a short pale brownish or whitish streak above the dusky anteocular spot; and by having the throat and malar region whitish or pale brownish, narrowly streaked with blackish brown. The tail appears to be less emarginate.

This exceedingly rare Swift is only known to inhabit eastern Brazil, from southern Piauhy to Rio Grande do Sul and, as in part of this range it occurs together with *S. z. zonaris*, there can be no question about their specific distinctness.]

[310. **Reinarda squamata** (Cassin).

Cypselus squamatus Cassin, Proc. Ac. Nat. Sci. Phila., 6, p. 369, 1853—British Guiana.

Claudia squamata Reiser, pp. 62, 136—Burity, near Parnaguá, and Riacho d'Ardeia, near Santa Philomena, Piauhy.

Piauhy: Burity, near Parnaguá, ♂ ad., June 23, 1903; Riacho d'Ardeia, near Santa Philomena, ♂ ad., July 10, 1903. O. Reiser (Vienna Museum).

The Vienna Academy Expedition found this Palm Swift breeding at various localities in southern Piauhy. Its range extends from Guiana and the banks of the Orinoco south to Bahia, Goyaz, and western Minas Geraes, west to eastern Peru.]

[311. **Panyptila cayennensis** (Gmelin).

Hirundo cayennensis Gmelin, Syst. Nat., 1, (2), p. 1024, 1789—based on "Martinet à collier de Cayenne" Daubenton, Pl. Enl. 725, fig. 2, Cayenne.

Panyptila cayennensis (sic) Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 67, 1926—Tury-assú, Maranhão.

The only record for our region is a specimen secured by Madame Snethlage at Tury-assú. The Cayenne Swift ranges as far south as São Paulo, Brazil.]

312. *Nyctidromus albicollis albicollis* (Gmelin).

Caprimulgus albicollis Gmelin, Syst. Nat., 1, (2), p. 1030, 1789—Cayenne.

Nyctidromus albicollis Reiser, pp. 62, 135—Parnaguá and Lagoa Missão, Piahy.

Maranhão: Barra do Corda, ♂ imm., Aug. 18, 1924; Tranqueira, ♂ ad., Sept. 11, 1925.

These birds, like others from Pará, are doubtless referable to the typical race and *not* to the much larger *N. a. derbyanus* which extends at least as far north as western Minas Geraes, Goyaz, and Matto Grosso. Not having seen any material from Pernambuco or Bahia, I am unable to say where the ranges of the two forms meet.

313. *Nyctipolus nigrescens* (Cabanis).

Caprimulgus nigrescens Cabanis in Schomburgk, Reisen Brit. Guiana, 3, p. 710, "1848"—lower Essequibo, British Guiana.

Maranhão: Tury-assú, ♀ ad., Nov. 30, 1923.

Another Lower-Amazonian species whose range is shown by the present record to extend to the forest region of northern Maranhão.

[314. *Nyctipolus hirundinaceus hirundinaceus* (Spix).

Caprimulgus hirundinaceus Spix, Av. Bras., 2, p. 2, pl. 3, fig. 1, 1825—"in sylvis fluminis Solimões," *errore*; we substitute Feira de Sant' Anna, Bahia (type in Munich Museum examined); Reiser, pp. 62, 135—part, Serra near Parnaguá and Burity, near Parnaguá, Piahy.

Piahy: Serra near Parnaguá, ♂ imm., May 20, 1903; Burity, near Parnaguá, ♀ imm., June 4, 1903. O. Reiser (Vienna Museum).

Thanks to the authorities of the Vienna and Munich Museums, I have been enabled to directly compare the type and a good series from Bahia and Piahy with the material in Field Museum, and the study of these twenty-five examples seems to indicate the existence of two races.

At the outset it must be stated that the late C. B. Cory¹ was mistaken in assuming that typical *hirundinaceus* inhabits "southern Brazil, Paraguay, N. Argentine." There is no record for any member of this group from farther south than Bahia, and his suggestions as to the probable origin of Spix's type from southern Brazil² are wholly unfounded.

¹Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 1, p. 136, 1917.

²L. c., 12, p. 5, 1917.

The type specimen, three birds from Rio do Peixe, near Queimadas, Bahia,¹ and four trade skins from Bahia agree among themselves in dark coloration of upper parts, heavily barred abdomen, and in having a number of distinct dusky bars on the longer under tail coverts. The shafts of the quills in the white wing area are black or dark brown, but never white. The white wing band itself is rather restricted, the outermost primary *never* showing any white on the *outer* web. In the type and three Bahia trade skins (one male, two females), the *outer* web of the second primary is likewise uniform black, while another Bahia skin (female), the three Rio do Peixe specimens, and two from southern Piauhý (vicinity of Parnaguá) have a white band on the *outer* as well as on the *inner* vane, though considerably less extended on the former. On the third primary, the white band generally crosses *both* webs, though it is missing on the outer web in one male² and one female trade skin from Bahia. Spix's type and three of the Bahia trade skins are rather darker on the belly than those from Rio do Peixe (*C. h. crissalis*), but the difference is less than the variation shown in our series from Ceará, and besides, the male from the Serra near Parnaguá, Piauhý, is quite as dark-bellied. A female from near Parnaguá, while slightly paler above, is more heavily barred on the abdomen and under tail coverts than any other specimen examined. *C. h. crissalis* is thus seen to be merely *C. hirundinaceus* redescribed.

Ten skins from Ceará (*N. hirundinaceus cearae* Cory)³ differ by decidedly paler upper parts, with the buffy and grayish markings more prominent; fewer and narrower blackish markings on the chest, becoming obsolete on the lower belly; plain (unbarred) thighs and under tail coverts; finally by the wider white wing band crossing *both* webs even on the *two outermost* primaries,⁴ with the shafts of the quills in the white areas either wholly or partly white.

Five specimens from Joazeiro, in northern Bahia, collected by Reiser⁵ and E. Garbe,⁶ agree with the Ceará series in coloration⁷ of

¹*Caprimulgus hirundinaceus crissalis* Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 301, 1915.

²It is from this somewhat aberrant specimen (Vienna Museum, No. II. 1844.13.387) that the drawing of the wing in my review of Spix's types (Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 637, 1906) was made.

³Field Mus. Nat. Hist. Pub., Zool. Ser., 12, p. 4, 1917—Quixada, Ceará.

⁴Absent on the outer web of the first primary in one female only (No. 47177, Juá) and replaced by an ochraceous buff spot in another female (No. 47179, Juá).

⁵*Caprimulgus hirundinaceus* Reiser, Denks. Math.-naturw. Kl. Ak. Wiss. Wien, 76, pp. 62, 135.

⁶*Stenopsis longirostris* (errore) Ihering, Rev. Mus. Paul., 9, pp. 426, 465, 1914.

upper and under parts, but show a slight approach to *N. h. hirundinaceus*, of southern Bahia and Piauh, by the lesser development of the white wing band. This is as wide as in Ceará examples, with the shafts in the white areas also white, but varies considerably in extent. One male only (Piranga, near Joazeiro, March 10, 1903. O. Reiser, No. 215. Vienna Museum) resembles specimens with the maximum of white in the wing, having a white band across both webs of the five outer primaries; in the four others (two males, two females) the outer web of the outermost primary is devoid of white, as in the Ceará female (No. 47177) with the least amount of white.

There are, therefore, two races:

(a) *N. hirundinaceus hirundinaceus* (Spix), ranging from the vicinity of Bahia City across the state to southern Piauh (neighborhood of Parnaguá).

(b) *N. hirundinaceus cearae* Cory, ranging from Ceará south to Joazeiro, in extreme northern Bahia.

MEASUREMENTS

N. h. hirundinaceus

Males	Wing	Tail
Type of <i>C. hirundinaceus</i>	125	94
Bahia (trade skin)	130	93
Rio do Peixe, near Queimadas, Bahia (two)	122, 123	88, 89
Serra near Parnaguá, Piauh (one)	120	92
Females		
Bahia trade skins (three)	124, 126, 129	90, 92, 93
Rio do Peixe, near Queimadas, Bahia (one)	125	91
Burity, near Parnaguá, Piauh (one)	121	88

N. hirundinaceus cearae

Males		
Quixada and Juá, Ceará (six)	112, 117, 118, 120, 121, 124	83, 84, 85, 86, 87, 91
Joazeiro, Bahia (three)	126, 127, 128	90, 92, 94
Females		
Quixada and Juá, Ceará (four)	121, 122, 126, 127	89, 90, 90, 93
Joazeiro, Bahia (two)	123, 126	87, 89]

315. *Nyctipolus hirundinaceus cearae* Cory.

Nyctipolus hirundinaceus cearae Cory, Field Mus. Nat. Hist. Pub., Zool. Ser., 12, p. 4, 1917—Quixada, Juá.

Ceará: Quixada, five ♂♂ ad., ♀ ad., June, 1913; Juá, near Igatú, ♂ ad., three ♀♀ ad., July and August, 1913. R. H. Becker.

This form, as explained under the preceding heading, represents the typical race in Ceará and the extreme northern section of Bahia.

316. *Setopagis parvula parvula* (Gould).

Caprimulgus parvulus Gould, P. Z. S. Lond., 5, p. 22, 1837—no locality specified; the type was obtained by Darwin near Santa Fé, Río Paraná, Argentina; Reiser, pp. 62, 135—Parnaguá and Pedrinha, Piahy.

Maranhão: Tranqueira, ♂ ad., Aug. 26, 1925.—Wing 137; tail 100.

Ceará: Varzea Formosa, juv., Feb. 20, 1925.

I am unable to find any difference between specimens from various parts of Brazil (São Paulo, Matto Grosso, Bahia, Maranhão, Rio Madeira, Santarém) and four from Argentina, including two from Ocampo, Santa Fé.

This Goatsucker ranges north to the Amazon and west to eastern Peru. In the Santa Marta region of northern Colombia it is represented by *S. parvula heterura* Todd, with darker under parts and longer white tips to the rectrices.

[317. *Hydropsalis torquata* (Gmelin).

Caprimulgus torquatus Gmelin, Syst. Nat., 1, (2), p. 1032, 1789—based on Brisson¹ (ex Marcgrave's "Guiraguera," Hist. Nat. Bras., p. 202), northeastern Brazil.

Hydropsalis torquata Snethlage, Bol. Mus. Goeldi, 8, p. 178, 1914—Maranhão.

The Ringed Nighthawk, originally described by Marcgrave from our region, is recorded by Madame Snethlage from Maranhão, without specifying the locality. We have no material from north of Bahia.

Its range extends from the south bank of the lower Amazon, south to São Paulo, and west to the Rio Madeira and eastern Matto Grosso (Cuyabá, Chapada). The interrelations of *H. torquata* and *H. furcifer* (Vieillot) require thorough investigation.]

318. *Chordeiles acutipennis acutipennis* (Hermann).

Caprimulgus acutipennis Hermann, Tab. Aff. Anim., p. 230, 1783—based on "L'Engoulevent acutipenne, de la Guyane" Buffon, Hist. Nat. Ois., 6, p. 547, Cayenne.

Maranhão: São Bento, ♀ ad., Sept. 6, 1923.—Wing 163; tail 97.

Widely distributed in eastern South America, from the Caribbean coast south to São Paulo and Matto Grosso. Birds from south of the Amazon perhaps average rather larger.

¹Brisson quotes several other references, but his description is merely a translation of Marcgrave's account. Although the "Guiraguera" is none too well characterized, Lichtenstein (Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1814-15, p. 164, pub. 1817), who had access to Marcgrave's original drawing, identified it with the Ringed Nighthawk.

[319. *Nannochordeiles pusillus pusillus* (Gould).

Chordeiles ? pusillus Gould, P. Z. S. Lond., 1861, p. 182—"supposed to be Bahia" (the type examined in the British Museum is a Bahia trade skin).

Nannochordeiles pusillus Reiser, pp. 62, 134—Nazara, Rio Parnahyba, Piauhy.

Piauhy: Nazara, Rio Parnahyba, ♂ ad., ♀ ad., ♀ imm., Aug. 12, 1903. O. Reiser (Vienna Museum).

Agreeing with specimens from Bahia.

This little Nighthawk ranges all over the interior of Brazil, from Piauhy south to western Minas Geraes, Goyaz, and Matto Grosso. North of the Amazon (on the Rio Branco), in British Guiana, and Venezuela (banks of the Orinoco) it is replaced by a smaller form, *N. pusillus septentrionalis* Hellmayr.]

[320. *Nyctiprogne leucopyga* (Spix).

Caprimulgus leucopygus Spix, Av. Bras., 2, p. 3, pl. 3, fig. 2, 1825—"ad litora sylvestria fl. Amazonum" (type lost).

Nyctiprogne leucopyga Reiser, pp. 62, 134—Nazara, Rio Parnahyba, Piauhy.

Piauhy: Nazara, Rio Parnahyba, ♂ ad., Aug. 12, 1903. O. Reiser (Vienna Museum).—Wing 133; tail 90.

This specimen—the only one seen from the region—is identical with others from Amazonia, French Guiana, and Venezuela (Orinoco River).

This nighthawk ranges south to western Matto Grosso, where an adult female was taken by Natterer at Villa Bella (de Matto Grosso) on November 22, 1826.]

321. *Podager nacunda nacunda* (Vieillot).

Caprimulgus nacunda Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 10, p. 240, 1817—based on Azara, No. 312, Paraguay.

Podager nacunda Reiser, pp. 62, 134—Illa São Martin, Rio Parnahyba, and environs of Parnaguá, Piauhy.

Piauhy: Ibiapaba, (♀) ad., Dec. 22, 1924.—Wing 239; tail 120.

Agreeing in size with specimens from Bahia (São Marcello, Rio Preto) and Misiones. Two birds from Pará having similar measurements (wing 242-250; tail 120), it would appear that the large form ranges north to the south bank of the Amazon.

Birds from the Rio Branco and British Guiana are much smaller and have been correctly separated as *P. nacunda minor* Cory.¹

¹Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 300, 1915—Bôa Vista, Rio Branco.

[322. *Nyctibius griseus griseus* (Gmelin).

Caprimulgus griseus Gmelin, Syst. Nat., 1, (2), p. 1029, 1789—based on Buffon, Cayenne.

Nyctibius griseus Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 67, 1926—São Bento, Maranhão.

Two specimens of this species, generally distributed in eastern South America, were taken by Madame Snethlage at São Bento, in northern Maranhão.]

323. *Otus choliba crucigerus* (Spix).

Strix crucigera Spix, Av. Bras., 1, p. 22, pl. 9, 1824—"juxta flumen Amazonum."

Maranhão: São Luiz, ♂ ad., Aug. 2, 1923.

As far as it is possible to judge from a single specimen, this bird appears to belong to the Amazonian race rather than to *O. choliba decussata* (Lichtenstein), of which Field Museum has several skins from Santo Amaro and São Marcello, Rio Preto, Bahia. From the latter, the Maranhão bird differs by somewhat darker, more buffy under parts with heavier black markings, and more deeply colored dorsal surface.

O. choliba crucigerus is widely distributed throughout the Guianan-Amazonian forest region and ranges north to the Orinoco Valley and the island of Trinidad. In the east, it probably does not extend beyond the forest district of northern Maranhão. In the arid littoral along the Caribbean coast of Venezuela and Colombia a slightly paler form is found for which Cory's term *O. choliba margaritae*¹ is available.

324. *Speotyto cunicularia grallaria* (Temminck).

Strix grallaria Temminck, Nouv. Rec. Pl. Col., livr. 25, pl. 146, Aug., 1822—"Brésil"; we suggest Faxina, São Paulo (ex Natterer) as type locality.²

Speotyto cunicularis (sic) (not *Strix cunicularia* Molina) Reiser (1), p. 91, 1910—Santo Antonio de Gilboez, Piahy.

¹Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 298, 1915—Margarita Island.

²Cory (Field Mus. Nat. Hist. Pub., Zool. Ser., 12, p. 6, 1917) had proposed "Minas Geraes" (ex Spix), believing Temminck's type to be lost. However, we learn from Schlegel (Mus. Hist. Nat. Pays-Bas, Striges, p. 30, 1862) that the original of plate 146 is still preserved in the Leiden Museum, and although he fails to state the name of the collector or the exact locality in Brazil, his remark "individu à plumage teint de roux par la poussière des terres ferrugineuses des trous souterrains qu' habite l'espèce" makes it reasonably certain that it is one of the specimens with stained plumage obtained by Natterer in the excavations of the Anteaters near Faxina, in southern São Paulo (see Pelzeln, Orn. Bras., 1, p. 9, 1868). Temminck, moreover, mentions the Vienna Museum as possessing the species.

Speotyto cunicularia grallaria Reiser (2), p. 210, 1925—same locality.

Maranhão: Codó, Cocos, ♂ ad., ♀ ad., July 11, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 20, 1925.

These specimens agree perfectly with the original series of *S. cunicularia beckeri* Cory,¹ which I am, however, unable to satisfactorily separate from birds taken in western Minas Geraes (Agua Suja, near Bagagem), São Paulo, and Paraná. The tarsal feathering, while never so highly developed as in typical *S. c. cunicularia*, of Chile, Argentina, and Uruguay, varies a good deal in Brazilian individuals regardless of locality, and so does the extent of the white forehead, another character used by Cory² for the discrimination of two forms in eastern Brazil. It is possible that birds from Bahia and northwards are on the average slightly smaller in wing measurements and more heavily marked underneath, but until the constancy of these rather trifling divergencies has been proved by sufficient series, I am not prepared to admit more than one form. The wing measures in two adult males from Minas Geraes and São Paulo (Ypiranga) 172 and 175, in four from Bahia and Maranhão from 160 to 168; in two adult females from São Paulo (Fazenda do Rio Verde, Ypiranga) 180 and 184, in one from Paraná (Curityba) 180, in three from Bahia and Maranhão 173, 175, 176 mm.

S. cunicularia grallaria thus ranges over the dry interior districts of eastern Brazil, from Maranhão and Piauhys through Minas Geraes and Bahia south to Paraná (Curityba).

While no representative of the Burrowing Owl is found in the forested Amazon Valley,³ we meet in the savannahs of the upper Rio Branco with the much smaller, paler *S. c. minor* Cory,⁴ whose distinctness from *S. c. brachyptera* Richmond, of Venezuela, has, however, still to be proved.

[325. *Ciccaba huhula huhula* (Daudin).

Strix huhula Daudin, *Traité d'Orn.*, 2, p. 190, 1800—based on Levaillant, *Ois. d'Afr.*, 1, pl. 41, Cayenne.

Syrnium huhula Reiser (1), p. 91, 1910—Brejão, Piauhys.

Syrnium (Ciccaba) huhulum Reiser (2), p. 210, 1925—Brejão.

¹Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 299, 1915—São Marcello, Rio Preto, Bahia.

²Field Mus. Nat. Hist. Pub., Zool. Ser., 12, p. 6, 1917.

³The habitat "in campis . . . Minas Geraes et Parae" apud Spix (*Av. Bras.*, 1, p. 21, 1824) is no doubt a pen-slip for "Bahiae."

⁴Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 1, p. 40, 1918—Bôa Vista, Rio Branco, Brazil.

Reiser records a specimen, partly in downy plumage, from Brejão, a village on the road between Santo Antonio de Gilboez and Santa Philomena, in southern Piahy.

This Owl ranges from Guiana through Amazonia and eastern Brazil down to São Paulo.^{1]}

326. **Glaucidium brasilianum brasilianum** (Gmelin).

Strix brasiliana Gmelin, Syst. Nat., 1, (1), p. 289, 1788—based on "Caburé" (Brisson ex) Marcgrave, Hist. Nat. Bras., p. 212, northeastern Brazil; we suggest Ceará.

Glaucidium brasilianum Reiser, pp. 91, 210—Matinha and Santa Philomena, Piahy.

Maranhão: Mangunça Island, ♀ ad., Feb. 27, 1924.

Piahy: Ibiapaba, ♂ ad., Dec. 22, 1924; Arára, ♀ ad., Feb. 15, 1925.

Additional specimens.—Piahy: Matinha, base of Serra de Santa Philomena, ♂ ad., July 8, 1903; Santa Philomena, ♀ ad., July 17, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♀ ad., Aug. 29, 1913; Quixada, ♂ ad., ♀ ad., June 17, 18, 1913. R. H. Becker.

The Piahy specimens agree with those from Ceará which we may consider as topotypes of *G. b. brasilianum*. The female from Mangunça Island,—in the rufous "phase,"—on account of its large size and very boldy streaked under parts, must likewise be referred here, and it is probable that the range of typical *brasilianum* extends north to Pará and the south bank of the Amazon, while *G. b. phalaenoides* (Daudin) would seem to be confined to Guiana, Trinidad, and northern Venezuela. Birds from southern Brazil (*Strix ferruginea* Wied)² and Paraguay (*Strix ferox* Vieillot)³ appear to be inseparable from *brasilianum*.

327. **Colaptes⁴ campestris chrysosternus** (Swainson).

Picus chrysosternus Swainson, Mem. Wernerian Nat. Hist. Soc., 3, p. 289, 1821—"in the dry and arid tracts of table-land in the Sertem [sic] or inland country of the Province of Bahia."

¹Madame Snethlage (Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 47), in her paper on birds collected in Ceará, without specifying the locality, mentions "*Asio mexicanus* (Gm.)." This may possibly refer to *Rhinoptynx clamator* (Vieillot).

²Reise Brasil., 1, p. 105, 1820—Macahé, state of Rio de Janeiro.

³Nouv. Dict. Hist. Nat., nouv. éd., 7, p. 22, 1817—based on "Caburé" Azara, No. 49, Paraguay.

⁴About the limits of this genus, see Wetmore, Bull. U. S. Nat. Mus., 133, p. 224, 1926.

Soroplex campestris cearae Cory, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 2, p. 414, 1919—Quixada, Ceará.

Maranhão: Codó, Cocos, ♂ ad., June 16, 1924.

Additional specimens.—Ceará: Quixada, ♂ ad., ♀ juv. (molting), June 22, 25, 1913. R. H. Becker; unspecified, ♂ ad., Berlepsch collection.

Comparison of a good series of this Flicker from various parts of its range seems to indicate the existence of two fairly distinguishable subspecies. Birds from the interior of Bahia (Barra and Rio Grande), Ceará, and Maranhão may be separated from southern examples by wider, more whitish bands on the dorsal surface and more decidedly yellowish under parts, with the dusky markings on the breast reduced to narrow arrow-shaped spots, leaving the middle of the lower abdomen almost immaculate.

These characters, while well pronounced in three skins from Ceará and a couple of adults from Fazenda da Serra, Rio Grande, northwestern Bahia, in the Vienna Museum, are, however, not quite constant, since another male from Barra do Rio Grande, Bahia, and our bird from Cocos, Maranhão, both above and below, closely approach typical *campestris*, from southern Brazil and Paraguay.

The smaller size insisted upon by the late C. B. Cory does not exist and is due to the fact that in both specimens from Ceará the longest (fourth) primary is not fully grown, and the tail is in the process of molting.

Young birds are immediately recognizable by the much larger (broader as well as longer) first primary and the distinct white apical spot to the fourth, fifth and sixth primaries.

According to the material at hand, *C. c. chrysosternus* is restricted in its range to northeastern Brazil, from Bahia north to Ceará and Maranhão,¹ while *C. c. campestris* inhabits Paraguay and southern Brazil, north to about 15° s. latitude. Specimens from Goyaz City and Agua Suja, near Bagagem, Minas Geraes are indistinguishable from others taken at Villa Concepción, Paraguay and a series from São Paulo.

328. *Piculus*² *chrysochloros chrysochloros* (Vieillot).

Picus chrysochloros Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 26, p. 98, 1818—based on Azara, No. 256, Paraguay.

¹The specimens from Monte Alegre, north bank of the lower Amazon, recorded by Madame Snethlage (Bol. Mus. Goeldi, 8, p. 244, 1914) as *C. campestris*, are probably also referable to it.

²*Piculus* Spix replaces *Chloronerpes*. See Oberholser, Proc. Biol. Soc. Wash., 36, p. 201, 1923.

Chloronerpes chrysochlorus brasiliensis Reiser (1), p. 60, 1910—Parnaguá and Fazenda da Mata, trail to Santo Antonio de Gilboez, Piauhý.

Chloronerpes chrysochlorus Reiser (2), p. 128, 1925—same localities.

Piauhý: Arára, ♀ ad., Feb. 13, 1925.—“Iris white, feet grayish olive, bill black, lower mandible dark gray.”

Additional specimens.—Piauhý: Parnaguá, ♂ ad., ♀ ad., May 16, June 1, 1903; Fazenda da Mata, trail from Parnaguá to Santo Antonio de Gilboez, ♂ ad., June 25, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., Sept. 3, 1913. R. H. Becker.

In the light of additional material, the distinction claimed to exist between *P. c. chrysochloros* and *P. c. brasiliensis*¹ cannot be maintained, and I now agree with Hesse² that there is but one form of this Woodpecker in the interior of Brazil, ranging from Piauhý and Ceará south to Bahia and west to Matto Grosso, Paraguay, and northern Argentina. Birds from Rio de Janeiro, however, are much larger and constitute a well-marked race which, as pointed out by Hesse,³ is obviously entitled to the name *P. c. polyzonus* (Valenciennes),⁴ although I failed to discover the type among the Woodpeckers in the Paris Museum.

MEASUREMENTS

<i>P. c. chrysochloros</i>			
Adult males			
Río Pilcomayo, Paraguay (one)	Wing 125½	Tail 82	Bill 22½
Fraile, Jujuy (one)	124	87	21½
Orán, Salta (one)	127	82	24
Miranda, Matto Grosso (one)	120	86	21½
Cuyabá, Matto Grosso (one)	115	74	22
Bahia (two)	121, 124	72, 75	24, 25
Piauhý (two)	118, 121	76, 76	24, 25
Juá, Ceará (one)	115	80	21
Type of <i>P. macrocephalus</i> Spix	125	79	25
Adult females			
Río Pilcomayo, Paraguay (one)	126	82	23
Ledesma, Jujuy (one)	124½	83	23
Cuyabá, Matto Grosso (one)	117	77	21
Bahia (one)	122	79	24½
Piauhý (two)	122, 125	77½, 78	24, 24
<i>P. c. polyzonus</i>			
Male adult, Rio de Janeiro	153	87	31
Female adult, Rio de Janeiro	152	80	32
Female adult, Cantagallo, Rio	150	—	31½

¹See Hellmayr, Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 605, 1906, and Nov. Zool., 17, p. 282, 1910.

²Mitt. Zool. Mus. Berlin, 6, pp. 238-244, 1912.

³Loc. cit., p. 239.

⁴*Picus polyzonus* Valenciennes, Dict. Sci. Nat., (éd. Levrault), 40, p. 170, 1826—Brazil, coll. Auguste de Saint-Hilaire.

[329. *Piculus chrysochloros paraensis* (Snethlage).

Chloronerpes paraensis Snethlage, Ornith. Monatsber., 15, p. 163, 1907—Murutucú, near Pará (type examined); idem, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 65, 1926—Miritiba, Maranhão.

Two specimens of this Woodpecker, hitherto known to inhabit the south bank of the Amazon from Pará to the Rio Madeira, are recorded by Madame Snethlage from Miritiba, northern Maranhão, thereby extending its range considerably to the east. This well-marked form, whose affinities and characters we have fully discussed in another connection,¹ obviously represents the foregoing race in the forested coast region of the state.]

[330. *Piculus flavigula magnus* (Cherrie and Reichenberger).

Chloronerpes flavigula magnus Cherrie and Reichenberger, Amer. Mus. Novit., 27, p. 4, 1921—Monte Christo, Matto Grosso (type examined).

Chloronerpes flavigula (not of Boddaert) Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 65, 1926—Tury-assú, Maranhão.

We have seen no material from Maranhão, whence Madame Snethlage records two examples secured at Tury-assú. Birds from the Pará region, which no doubt belong to the same form, are referable to the large southern form, ranging along the south bank of the Amazon west to the Rio Madeira and northern Matto Grosso.]

331. *Chrysophilus melanochloros*² *nattereri* (Malherbe).

"*Picus nattereri* ou *Chrysophilus* (Swains.) *nattereri*" (sic) Malherbe, Mém. Soc. Roy. Sci. Liège, 2, p. 66, April, 1845—Brazil, coll. Natterer, = Cuyabá, Matto Grosso.

Chrysophilus melanochloros juae Cory, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 2, pp. 441, 444, 1919—Juá, near Iguatú, Ceará.

Maranhão: Codó, Cocos, ♂ ad., June 17, 1924; Barra do Corda, ♀ ad., Sept. 23, 1924; São Francisco, Rio Parnahyba (opposite Amaranthe), ♂ ad., July 1, 1925.

Piauí: Ibiapaba, ♀ ad., Dec. 27, 1924.

Additional specimens.—Ceará: Juá, near Iguatú, three ♂♂, two ♀♀ ad., Aug. 1, 12, 14, 20, 27, 1913; Quixadá, ♀ ad., June 27, 1913. R. H. Becker.

¹Nov. Zool., 17, pp. 381, 382, 1910.

²I have elsewhere (Verh. Orn. Ges. Bay., 12, p. 154, 1915) stated my reasons for adopting *Picus melanochloros* Gmelin as the earliest specific name for this

Wing (male) 128-135, (female) 125-134, once 138; tail 86-102; bill 25-30.

I am quite unable to separate these specimens from a series of skins from Matto Grosso, Goyaz, and eastern Bolivia (Buenavista, dept. Santa Cruz). The Ceará birds are perhaps less spotted on the posterior under parts, but individual variation is unusually great, and two from Bolivia have even fewer spots on the abdomen.

I am now even a little doubtful whether *C. m. flavilumbis* (Sundevall),¹ from Bahia, can be maintained. Specimens from near Andarahy, Joazeiro, and the Rio Preto are, I admit, more greenish (less yellowish) above, and their under parts appear to be more coarsely spotted on a duller yellowish ground color. However, a series from western Minas Geraes (Rio das Velhas, near Lagôa Santa; Agua Suja, near Bagagem; Rio Jordão, near Araguay) and two examples from northern São Paulo (Franca and Bebedouro) which, on geographical grounds, we would expect to belong to *nattereri*, agree with the Bahia form rather than with that of central Brazil.

In view of the extraordinary individual and seasonal variation, to which the plumage of this Woodpecker is subject, far more material than is at present available in museums will be required for the satisfactory definition of its geographical races.

332. *Chrysophilus melanochloros mariae* Hargitt.

Chrysophilus mariae Hargitt, Ibis, (6), 1, p. 59, 1889—"Chamicuros, Peru."

Maranhão: Mangunça Island, ♂ ad., March 8, 1924.—Wing 125; tail 86; bill 27.

Easily distinguished from the preceding race by stouter bill, deeper yellow upper parts, and much more buffy yellow ventral surface, with the black spots much smaller and restricted to the breast and inner sides of the body. It agrees with a specimen from Marajó except for having the throat just as heavily streaked as in *C. m. nattereri*. In another connection,² I have dwelt at length on its character group of Woodpeckers. *Picus icteromelas* Vieillot (Nouv. Dict. Hist. Nat., nouv. éd., 26, p. 84, 1818—"Brésil") apparently also refers to the large intensely colored form of southeastern Brazil (Espírito Santo to Rio Grande do Sul), as may be concluded from the description of the throat, which fits it particularly well.

¹*Picus flavilumbis* Sundevall, Consp. Picin., p. 74, 1866—Bahia.—*Chrysopicus chrysomelas* Malherbe (Monog. Picides, 2, p. 189, pl. 89, figs. 1, 2, 1862—"Brésil, Guyane ou Colombie") cannot be identified with certainty without examination of the type, probably in the Turati Collection at Milan.

²Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 135, 1912.

acters, pointing out at the same time that the type locality was open to doubt. Within recent years, *C. m. mariae* had been found only on the island of Marajó, and the present record extends its range to northern Maranhão.

333. *Leuconerpes candidus* (Otto).

Picus candidus Otto, Buffon's Naturg. Vogel, 23, p. 191, 1796—based on "Le Pic noir et blanc, de Cayenne" Holandre, Abrégé d'Hist. Nat., 3, p. 404, 1790, Cayenne.

Melanerpes candidus Reiser, pp. 60, 128—Lake Parnaguá, Piahy.

Maranhão: Barra do Corda, ♂ ad., Sept. 18, 1924; São Francisco (opposite Amarante), Rio Parnahyba, ♂ ad., June 3, 1925.

The Black-and-White Woodpecker is widely diffused in the campo region of Brazil, Paraguay, and northern Argentina. I have no topotypical material, but the birds from Maranhão and other parts of Brazil agree with two from Itacoatiará, on the lower Amazon.

334. *Veniliornis affinis ruficeps* (Spix).

Picus ruficeps Spix, Av. Bras., 1, p. 63, pl. 56, fig. 2 (♂), 3 (♀), 1824—"in sylvis flum. Amazonum"; we suggest Pará (types in Munich Museum examined).

Veniliornis ruficeps Reiser (1), p. 100—Maranhão.

Veniliornis ruficeps haematostigma (not of Malherbe) Reiser (2), p. 130—Miritiba, Maranhão.

Maranhão: Tury-assú, ♂ ad., ♂ imm., ♀ ad., Oct. 5, 29, 1923; Rosario, ♀ ad., May 9, 1924; Barra do Corda, ♂ imm., Sept. 23, 1924.

Additional specimens.—Maranhão: São Luiz, ♂ ad., three ♀ ♀ ad., May 17, June 2, 17, July 3, 1905 (Sophia Museum); Miritiba, two ♂ ♂ ad., two ♀ ♀ ad., F. Schwanda (Vienna and Munich Museums).

The series agree with specimens from Pará and the Tapajóz River. This is a Lower-Amazonian form, ranging from the lower Rio Madeira (Borba) east to Maranhão. In the state of Bahia it is represented by the nearly allied *V. affinis affinis* (Swainson),¹ which differs solely by the larger (more spot-like) pale markings, with very little, if any, red suffusion, on the smaller upper wing coverts. Other related forms are found in Upper Amazonia.

¹*Picus affinis* Swainson (Zool. Illust., 2, pl. 78, 1822—part, descr. of male and habitat Bahia) replaces *Mesopicus selysii* Malherbe (Monogr. Picid., 2, p. 67, pl. 62, 1862—Brésil). When lately in England, I examined Swainson's type in the Cambridge (Eng.) Museum and found it identical with Bahia specimens. The female, described by Swainson, however, proves to be referable to *V. maculifrons*.

335. *Veniliornis passerinus transfluvialis* subsp. nov.

Veniliornis olivinus (not *Picus olivinus* Malherbe) Reiser (1), p. 60, 1910—Palmeirinhas, Parnaguá, Burity, and Lagôa Missão, Piauh; idem (2), p. 129, 1925—vicinity of Parnaguá.

Maranhão: Barra do Corda, ♂ juv., Sept. 17, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 28, 1925; Codó, Cocos, ♀ ad., June 16, 1924.

Additional specimens.—Piauh: Lagôa Missão, near Parnaguá, ♂ ad., May 29, 1903; Burity, near Parnaguá, ♂ ad., June 17, 1903; Parnaguá, ♀ ad., May 14, 1903; Palmeirinhas, south frontier range, ♂ ad., May 10, 1903. O. Reiser (Vienna Museum).

Type from Macaco Secco, near Andarahy, state of Bahia, Brazil, in Field Museum of Natural History, No. 47431. Adult male. November 6, 1913. R. H. Becker.

Adult.—Nearest to *V. passerinus olivinus* (Malherbe),¹ of Matto Grosso and Paraguay, and agreeing in the restriction of the red to the posterior half of the pileum in the adult male; but back and rump narrowly barred and spotted with pale yellow; light markings on upper wing coverts generally larger; throat whiter, less variegated with dusky; dark barring on under parts much wider, more regular, and extending unmodified up to the foreneck. Similar also to *V. passerinus taenionotus* (Reichenbach), but larger; upper parts much duller, less golden, with the red, in the adult male, restricted to the posterior pileum, and dark barring below, though of equal width, decidedly deeper in tone, less tinged with olivaceous. Wing (male) 88-92, (female) 85-91; tail 51-60; bill 18-21.

Range.—Eastern Brazil, from Maranhão and southern Piauh south to Bahia, Minas Geraes, and (?) northern São Paulo.

Material.—Maranhão 3 (as specified above); Piauh 4 (as specified above); Bahia, Macaco Secco, near Andarahy 4; Goyaz, Goyaz City 5, Fazenda Esperança 1, Rio Araguaya 2; Minas Geraes, Rio das Velhas, near Lagôa Santa 1, Agua Suja, near Bagagem 4.

This form is to a certain extent intermediate between *V. p. olivinus* of Matto Grosso, and *V. p. taenionotus*, of northern Bahia and neighboring states. While agreeing with the former in the restricted red cap of the male and the dull yellowish olive tone of the upper parts, it resembles the latter in the wide barring of the ventral sur-

¹*Picus olivinus* Malherbe, Mém. Soc. Roy. Sci. Liège, 2, p. 67, April, 1845—Brazil; type in Vienna Museum from Cuyabá, Matto Grosso.

face and the presence of distinct, though small, pale markings on back and rump.

The distribution of *V. p. transfluvialis* in northern Brazil is rather interesting. The adult female from Fazenda Inhumá, on the upper Parnahyba, as well as four adults, including three males, from the vicinity of Parnaguá, in southern Piauí are inseparable from Minas Geraes and south Bahia specimens, though they average perhaps slightly yellower above. A single female from Codó, Cocos, in eastern Maranhão is similar in size and coloration of under parts; but in the bright golden olive hue of the back it closely matches *V. p. taenionotus*, which is found on the right bank of the lower Parnahyba, from Therezina downwards.

336. *Veniliornis passerinus taenionotus* (Reichenbach).

Chloronerpes taenionotus Reichenbach, Handb. Spez. Orn., Scans., p. 354, pl. 625, figs. 4164-65, 1854—interior of Brazil.

Veniliornis taenionotus Reiser (1), p. 60, 1910—Therezina, below União, and Caçara, lower Parnahyba, Piauí; Snethlage, Bol. Mus. Goeldi, 8, p. 249, 1914—part, Amaração, Piauí; Reiser (2), p. 129, 1925—lower Parnahyba.

Veniliornis taenionotus cearae Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 306, 1915—Serra de Baturité, Ceará.

Piauí: Ibiapaba, ♂ ad., Jan. 13, 1925.

Ceará: Varzea Formosa, ♀ ad., March 3, 1925.

Additional specimens.—Piauí: Caçara, ♂ ad., Sept. 9, 1903; below União, ♂ juv., Aug. 25, 1903; Therezina, ♀ ad., Aug. 18, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, ♂ ad., July 30, 1913; Serra de Baturité, ♂ ad., two ♀ ♀ ad., July 14, 15, 18, 1913. R. H. Becker.

On comparing this series with eighteen Bahia trade skins and two adult males from the banks of the Rio São Francisco (Joazeiro; Solidade, near Carnahyba) in northern Bahia, I fail to see how they can be split into two races. Bahia specimens *possibly* have the brownish frontal band on average wider and the back slightly paler, but this does not hold good in the majority of cases. It is well to remember that Cory, when describing *V. t. cearae*, was not acquainted with *V. taenionotus*. The examples identified as such turn out to belong to an undescribed form for which we proposed the name *V. p. transfluvialis*.

V. p. taenionotus, which is certainly but the southern representative of *V. p. passerinus*, from Guiana and the north bank of the

lower Amazon, replaces the preceding form east of the lower Rio Parnahyba, and ranges south to the São Francisco River in northern Bahia, where O. Reiser obtained two adult males at Joazeiro and Solidade respectively. While females are only distinguishable by smaller size and brighter golden olive upper parts, the male of this form can easily be told from *V. p. transfluvialis* by having the entire pileum red, with the exception of a narrow frontal band (about 4 to 8 mm. wide).

MEASUREMENTS OF ADULT MALES

<i>V. p. olivinus</i>	Wing	Tail
Rio Negro and Bernalcué, Paraguay (two)	96,97	57½,58
Cuyabá, Matto Grosso (two)	90,91	53,55½
Engenho do Gama, Matto Grosso (one)	89	56
Chapada, Matto Grosso (one)	95	58
Urucúm, Matto Grosso (one)	95	57
Piraputanga, Matto Grosso (one)	93	58
<i>V. p. transfluvialis</i>		
Água Suja, near Bagagem, Minas Geraes (two)	91,92	59,59
Rio das Velhas, Minas Geraes (one)	92	—
Macaco Secco, near Andarahy, Bahia (three)	88,91,91	55,59,60
Goyaz (five)	89,89,91,91,93	52,56,58,59,60
Near Parnaguá, Piauí (three)	89,90,90	51,53,54
<i>V. p. taenionotus</i>		
Bahia trade skins (fourteen)	81,82,82,82,84,84,84,86,87,87,87,88,88,88	50,51,51,51,52,52,52,52,53,53,54,55,57,58
Joazeiro, Bahia (one)	85½	48
Solidade, Bahia (one)	84	51
Caiçara, lower Parnahyba, Piauí (one)	82½	50
Ibiapaba, Piauí (one)	83	52
Juá, Ceará (two)	80,86	52,55

337. *Celeus flavescens ochraceus* (Spix).

Picus ochraceus Spix, Av. Bras., 1, p. 59, pl. 51, fig. 1, 1824—"in sylvis Amazonum" (type in Munich Museum examined).

Celeus ochraceus Reiser, pp. 60, 130—Lagôa Missão and Piranha, Lake Parnaguá, Piauí.

Maranhão: São Bento, ♀ ad., Sept. 6, 1923; Rosario, ♀ ad., May 10, 1924; Grajahú, ♀ ad., Oct. 10, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., Aug. 1, 1925.

Piauí: Deserto, ♂ ad., Apr. 2, 1925.

Additional specimens.—Maranhão: Bôa Vista,¹ ♂ ad., Nov. 3,

¹Erroneously given as Bôa Vista, "Rio Branco" by C. B. Cory in Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 2, p. 448, 1919.

1906; Miritiba, ♂ ad., June 13, 1907. F. Schwanda (Munich Museum).—Piauhy: Lagôa Missão, ♂ ♀ ad., May 28, 29, 1903; Piranha, Lake Parnaguá, ♂ ad., May 29, 1903. O. Reiser (Vienna Museum).—Ceará: locality not specified, ♀ ad., (Coll. H. von Berlepsch).

The series agrees well with the type and two other specimens from the lower Amazon (Obidos; above the mouth of the Tapajóz). Some examples have the feathers of the breast and abdomen more or less edged, and sometimes also centrally spotted, with rusty, these markings being particularly well developed in the type, a female from São Bento, and a male from Missão, near Parnaguá, Piauhy. Shape and extent of the blackish brown markings on the back vary a great deal, and certain individuals closely approach *C. f. intercedens* Hellmayr,¹ of southern Bahia and Goyaz, although the latter is much blacker and more regularly banded above, and much less ochraceous throughout.

The range of *C. f. ochraceus* extends from the banks of the lower Amazon (Obidos, Monte Alegre, Santarém) east through Maranhão, Piauhy, and Ceará to Pernambuco, whence there is an adult male obtained on July 25, 1903, by A. Robert at São Lourenço, in the Tring Museum, and south to northwestern Bahia, where O. Reiser secured a male on April 24, 1903, at Cantinho, on the Rio Preto, which I have examined in the Vienna Museum.

Farther south, in the coast region of Bahia, at Santo Amaro, on the Ilhéos and Belmonte, however, we meet with *C. f. intercedens* which ranges across to southern Goyaz, while in southern Brazil, north to Minas Geraes and Rio de Janeiro the much larger, long-crested *C. f. flavescens* is found.

338. *Celeus jumana jumana* (Spix).

Picus jumana Spix, Av. Bras., 1, p. 57, pl. 47, 1824—"in sylvis flum. Amazonum" (types in Munich Museum examined).

Maranhão: Tury-assú, Alto de Alegria, ♀ ad., Nov. 10, 1923.

An Amazonian species which ranges east into the forest districts of northern Maranhão. Represented in eastern Peru and eastern Ecuador by *C. jumana citreopygius* Scl. and Salv., chiefly distinguishable by having the basal portion of the inner webs of the remiges plain buff without blackish crossbars. The relations of these two races to the group of *C. elegans*, from Guiana and northern Lower Amazonia, require careful investigation.

¹Nov. Zool., 15, p. 82, 1908—Fazenda Esperança, Goyaz.

339. *Crocomorphus flavus tectricialis* Hellmayr.

Crocomorphus flavus tectricialis Hellmayr, Anz. Orn. Ges. Bay., No. 6, p. 46, 1922—Bôa Vista, Maranhão.

Crocomorphus flavus (not *Picus flavus* Müller) Snethlage, Bol. Mus. Goeldi, 8, p. 253, 1914—part, Maranhão; Reiser (1), p. 100, 1910—Maranhão; idem (2), p. 131, 1925—Miritiba and São Luiz, Maranhão, and east of Santa Philomena, Piahy.

Maranhão: Tury-assú, ♂ ad., Oct. 15, 1923.—“Iris red, feet gray, bill yellow.”

Additional specimens.—Maranhão: São Luiz, ♂ ad., two ♀ ♀ ad., June 16, Nov. 3, 1905; Bôa Vista, ♀ ad., Nov. 12, 1906; Miritiba, ♂ ad., ♀ ad., Dec. 18, 1907, Feb. 3, 1908. F. Schwanda (Vienna and Sophia Museums).

By slightly yellower plumage and cinnamomeous edges to the primaries and outer secondaries, this bird diverges a little from the original series in the direction of *C. f. inornatus* Cherrie, the Amazonian representative of this group. It agrees, however, with the specimens from São Luiz do Maranhão and farther east in having the tertials entirely, and the upper wing coverts largely tipped with buffy whitish. Two examples have larger blackish brown spots at the base of the interscapulars and faint suggestions of similar markings on the chest, thus indicating an approach to *C. f. subflavus* (Sclater and Salvin), of Bahia.

This Woodpecker represents one of the few instances in which the Maranhão form is different from that found near Pará. Although recorded only from Maranhão and Piahy, its range doubtless extends into Ceará and neighboring states, where it may be expected to intergrade with the little known, but strongly marked Bahian race.

340. *Scapanus melanoleucos cearae* Cory.

*Scapanus melanoleucos*¹ *cearae* Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 306, 1916—Juá, near Iguatú, Ceará.

Campephilus melanoleucus Reiser (2), p. 131, 1925—Castelliano, Rio Parna-hyba, Piahy.

Ceará: Juá, near Iguatú, ♂ ad., ♂ juv., ♀ ad., Aug. 12, 24, 25, 1913. R. H. Becker.

¹The type of *Picus melanoleucos* Gmelin (Syst. Nat., 1, (1), p. 426, 1788—based on “Buff-crested Woodpecker” Latham, Gen. Syn. Birds, 1, (2), p. 558, pl. 25, 1782, Surinam), which I have carefully examined in the Vienna Museum, is a female with discolored crest. Gmelin's description, in several points, is inaccurate.

A very questionable race, the validity of which cannot be decided with the material at hand. It was separated from *S. m. melanoleucos* on account of its smaller size, but the describer overlooked the fact that birds from southern Brazil and Paraguay, for which the name *Picus albirostris* Vieillot¹ is available, are not quite the same as those found north of the Amazon, and it appears extremely doubtful whether a third, still smaller form, peculiar to northeastern Brazil, can be discriminated.

In specimens from Guiana, Venezuela, and Amazonia (*S. m. melanoleucos*) the length of the wing ranges from 185 to 195; in those from Paraguay (Villa Concepción) and southern Brazil (Minas Geraes, Goyaz, Matto Grosso, São Paulo), which eventually may have to be called *S. m. albirostris*, the same measurement runs from 178 to 186; and in five adults from Ceará and Bahia (Solidade; Macaco Secco, near Andarahy) it varies from 160 to 180 mm.

These figures show that the differences are insignificant for so large a bird, and require corroboration by the examination of a larger series.

[341. **Scapanus trachelopyrus** (Malherbe).

Megapicus trachelopyrus (Bonaparte MS.) Malherbe, Bull. Soc. Hist. Nat. Moselle, 8ème cahier, 1856-57, p. 1, 1857—Peru.

Campophilus rubricollis (not *Picus rubricollis* Boddaert) Reiser (1), p. 100, 1910—Maranhão.

Campophilus trachelopyrus Reiser (2), p. 131, 1925—Miritiba.

The only specimen seen from this region is an adult female secured by F. Schwanda on November 12, 1907, at Miritiba, in the Vienna Museum. It agrees with skins from Pará.

This is again an Amazonian species (probably subspecifically related to the Guianan *C. rubricollis*), whose range extends east into the forest district of northern Maranhão.]

342. **Picumnus pygmaeus** (Lichtenstein).

Picus pygmaeus Lichtenstein, Verz. Dubl. Berliner Mus., p. 12, 1823—Brazil.

Picumnus pygmaeus Reiser, pp. 61, 131—Parnaguá and Piranha, Piahy.

Maranhão: Codó, Cocos, ♀ ad., July 8, 1924.

The single specimen is similarly marked, but much paler below than two from Macaco Secco, near Andarahy, Bahia, and may be separable subspecifically.

¹Nouv. Dict. Hist. Nat., nouv. éd., 26, p. 69, 1818—based on Azara, No. 249, Paraguay.

This Piculet has been recorded only from the states of Bahia, Piauí, and Maranhão.

343. *Picumnus guttifer* Sundevall.

Picumnus guttifer Sundevall, Consp. Picin., p. 101, 1866—Goyaz (type in Paris Museum examined).

Maranhão: Tranqueira, ♂ ad., ♂ juv., Sept. 1, 11, 1925.

The adult male agrees with others from Chapada (Matto Grosso) and Goyaz (wing 58; tail 35; bill 14).

P. guttifer ranges all over the highlands of central Brazil, south to western Minas Geraes and northern São Paulo, and west to Matto Grosso. Though it had been taken at various localities in Goyaz, the present record extends its area to southern Maranhão.

About the variation of this species, see Nov. Zool., 15, pp. 83-84, 1908.

P. jelskii Tacz., of eastern Peru (Junín to Urubamba) and *P. spilogaster* Sund., of British Guiana, are closely allied to, and apparently geographical representatives of, *P. guttifer*. I am not acquainted with *P. pallidus* Snethlage,¹ from Pará, stated to be intermediate between *P. sagittatus* (= *guttifer*) and *P. spilogaster*.

344. *Picumnus exilis alegriae* subsp. nov.

Maranhão: Tury-assú, two ♂ ♂ ad., three ♀ ♀ ad., Oct. 13, 15, 29, Dec. 6, 10, 1923; Tury-assú, Alto de Alegria, ♂ ad., two ♀ ♀ ad., Nov. 17, 19, 1923.

Type from Tury-assú, Alto de Alegria, state of Maranhão, Brazil, in Field Museum of Natural History. No. 63941. Adult male. November 17, 1923. Collected by H. Snethlage.

Adults.—Most nearly allied to *P. exilis buffonii* Lafresnaye,² of French and Dutch Guiana, and having the back marked in the same manner with numerous, very distinct yellowish-white and blackish spots; but ground color of upper parts much duller and less yellowish, buffy citrine rather than citrine; tips to anterior crown

¹Journ. Orn., 72, p. 449, 1924—Flor do Prado, near Quatipurú, Pará.—Although included by H. Snethlage in the list of northeast-Brazilian birds (Journ. Orn., 76, pp. 525, 703, 1928), it is not represented in his collection.

²*Picumnus buffonii* Lafresnaye, Rev. Zool., 8, pp. 6, 9, 1845—based on "Le très-petit Pic de Cayenne" Buffon [= Daubenton], Pl. Enl. 786, fig. 1, Cayenne.—Fifteen specimens from French Guiana, two from Surinam, and two from the Rio Branco (Serra da Lua, near Bôa Vista) examined.

in adult male decidedly paler and more orange (varying from cadmium orange to orange instead of from flame scarlet to orange chrome); ventral surface much less yellowish, being either white or very faintly tinged with pale naphthalene yellow.

Wing 47-50; tail 25-27; bill 10-11.

Range.—Only known from the forested coast region in north-western Maranhão, northern Brazil.

Remarks.—This new Piculet, in spite of its habitat, is more closely related to the Guianan race than to *P. e. exilis* (Lichtenstein),¹ from Bahia, which is immediately recognizable by its much brighter aniline yellow back, without distinct white spots, and mustard yellow under parts. By the whitish ventral surface, *P. e. alegriae* rather approaches *P. e. undulatus* Hargitt, from British Guiana and Venezuela (Orinoco-Caura basin), but is much duller, less greenish as well as more heavily spotted above, while the tips to the feathers of the anterior crown are orange rather than scarlet.

From faunal affinities it may be expected that the range of *P. e. alegriae* will be found to extend into the neighboring Pará district, although so far no representative of the *P. exilis* group has been recorded from the south bank of the Amazon. *P. buffoni amazonicus* Snethlage,² from the north bank of the lower Amazon, appears to be inseparable from *P. e. buffonii*, as far as I can judge from two specimens, including the type;³ but regardless of its status, the name cannot be retained, being preoccupied by *P. amazonicus* Snethlage 1906.⁴

[345. *Picumnus limae* Snethlage.

Picumnus limae Snethlage, Journ. Orn., 72, p. 448, 1924—Serra do Castello, Ceará.

This is obviously a distinct species of peculiar coloration. Madame Snethlage believes it to be nearly allied to *P. leucogaster* Pelzeln,

¹*Picus exilis* Lichtenstein (Verz. Dubl. Berliner Mus., p. 11, 1823—"e provincia San Paulo," errore, = Bahia) appears to be the earliest available name for the yellow Brazilian Piculet, which, as yet, has been recorded only from the southern coast districts in the state of Bahia. *Motacilla minuta* Linnaeus (Syst. Nat., 10th ed., 1, p. 189, 1758—"in Indiis"), described as having the "dorsum alaeque supra grisea," can hardly be reconciled with its characters.

²Ornith. Monatsber., 22, p. 39, 1914—Santo Antonio da Cachoeira, Rio Jary, northern Pará.

³The description of the female is erroneous. An adult specimen of that sex from the type locality in the Berlin Museum agrees with other species in having the pileum black, spotted with white.

⁴Ornith. Monatsber., 14, p. 60, 1906—Marajó and Monte Alegre.

from the Rio Branco and Orinoco. It was discovered by F. Lima in the Serra do Castello, in southern Ceará.]

[346. *Streptoceryle torquata torquata* (Linnaeus).

Alcedo torquata Linnaeus, Syst. Nat., 12th ed., 1, p. 180, 1766—based on Brisson, Mexico.

Ceryle torquata Reiser, pp. 61, 132—above São Estevão, Rio Parnahyba, and Lake Parnaguá, Piauhý.

The Vienna Academy Expedition met with this kingfisher at various localities in Piauhý. The discrimination of more than two South American races appears impracticable.]

347. *Chloroceryle amazona* (Latham).

Alcedo amazona Latham, Ind. Orn., 1, p. 257, 1790—Cayenne.

Ceryle amazona Reiser, pp. 61, 133—Parnaguá and coast of Piauhý.

Piauhý: Ibiapaba, ♂ ad., Jan. 17, 1925.

Generally distributed in tropical America.

348. *Chloroceryle inda* (Linnaeus).

Alcedo inda Linnaeus, Syst., Nat. 12th ed., 1, p. 179, 1766—based on Edwards, Glean. Nat. Hist., 3, p. 262, pl. 335, Cayenne.

Ceryle inda Reiser, pp. 61, 133—Amaração, Piauhý.

Goyaz: Santo Antonio (Bôa Vista), ♂ ad., Jan. 25, 1926.

Generally distributed in tropical America.

349. *Chloroceryle americana americana* (Gmelin).

Alcedo americana Gmelin, Syst. Nat., 1, (1), p. 451, 1788—based on Daubenton (Pl. Enl. 591, figs. 1, 2), Brisson, etc., Cayenne.

Ceryle americana Reiser, pp. 61, 133—Rio Taquarussú, Piauhý.

Maranhão: Mangunça Island, ♀ ad., March 21, 1924; Rosario, two ♂♂ ad., May 8, 27, 1924; Tranqueira, ♀ ad., Aug. 28, 1925.

Piauhý: Ibiapaba, ♂ ad., Jan. 6, 1925.

Additional specimens.—Piauhý: Rio Taquarussú, ♂ ad., ♀ ad., July 10, 1903. O. Reiser (Vienna Museum).—Ceará: Quixada, ♀ ad., June 25, 1913. R. H. Becker.

Birds from northeastern Brazil south to Bahia appear to me inseparable from a Guianan series.

The several races lately discriminated rest on rather slender characters. *C. a. viridis* (Vieillot), of southern Brazil, Paraguay, and northern Argentina, averages somewhat larger, with the green of the upper parts lighter and the green pectoral band in the females slightly narrower, while *C. a. croteta* Wetmore,¹ from Tobago (and Trinidad?) may be distinguished by its stouter, larger bill and plain (or very nearly unspotted) under tail coverts. On the Pacific coast, this Kingfisher is represented in Peru by *C. a. cabanisi* (Tschudi), and in western Colombia and western Ecuador by *C. a. hellmayri* Laubmann.²

350. *Trogonurus variegatus variegatus* (Spix).

Trogon variegatus Spix, Av. Bras., 1, p. 49, pl. 38a, 1824—Brazil (type in Munich Museum examined); Reiser, pp. 61, 132—Lagôa Missão, Olho d'Água, and Pedrinha, Piahy.

Maranhão: Codó, Cocos, ♂ ad., June 25, 1924; Barra do Corda, ♂ imm., Sept. 24, 1924; Tranqueira, ♀ ad., Aug. 25, 1925.

Goyaz: Philadelphia, lower Tocantins, ♀ ad. (in extremely worn breeding plumage), Dec. 14, 1925.

Ceará: Varzea Formosa, ♂ ad., March 1, 1925.

The males agree with others from Bahia and Rio, having the head and throat mainly purple, a distinct whitish chest band, the rump and upper tail coverts glossed with bluish, and the white bars on the lateral rectrices about half or two-thirds as wide as the black interspaces. An adult male from the Rio Araguaya, near Leopoldina, Goyaz, is likewise a typical example of *T. v. variegatus*, whose range would thus appear to comprise the eastern half of Brazil, from the Pará district south to Rio de Janeiro.

In northern Argentina and eastern Bolivia (Santa Cruz, etc.),³ the typical form is replaced by *T. v. behni* (Gould),⁴ easily distinguishable by bluish green (instead of purple) crown and throat, less bluish rump and central tail feathers, shorter white tips and narrower white bands on lateral rectrices, as well as much larger size.

In Amazonia, from the sources of the Beni River in northern Bolivia north to southeastern Colombia and east to the Tapajóz,

¹Journ. Wash. Ac. Sci., 12, p. 325, Aug., 1922—Tobago;—*C. a. insularum* Laubmann, Anz. Orn. Ges. Bay., No. 7, p. 52, Nov., 1922—Tobago.

²Anz. Orn. Ges. Bay., No. 7, p. 50, 1922—Noanamá, Chocó, Colombia.

³Judging from F. M. Chapman's remarks (in Bull. U. S. Nat. Mus., 117, p. 71, 1921), also in Matto Grosso whence I have no material.

⁴*Trogon behni* Gould, Monog. Trog., 2nd ed., pl. 20, 1875—Bolivia (Bridges).

T. v. bolivianus (Grant) takes its place. In size, purple head, and decidedly bluish green rump and tail, this form reverts to the characters of *T. v. variegatus*, but differs by lacking the distinct whitish pectoral band, and by having much narrower white crossbars (which are only one-third or one-fourth the width of the black interspaces) and shorter white tips to the lateral rectrices. A specimen from Cuembi, Río Putumayo, Colombia is less bluish on the rump, while one from Goyana, Rio Tapajóz, can be exactly matched by examples from Marcapata, Peru.

MEASUREMENTS OF ADULT MALES

<i>T. v. variegatus</i>	Wing	Tail
"Brazil" (the type)	123	128
Bahia (two)	121, 122	130, 132
Maranhão (two)	120, 126	125, 135
Rio Araguaya, Goyaz (one)	127	134
Rio de Janeiro (two)	125, 125	127, 128
<i>T. v. behni</i>		
Santa Cruz, Bolivia (four)	131, 131, 132, 132	142, 144, 148, 151
Orán, Salta (one)	136	140
Ledesma, Jujuy (one)	134	147
<i>T. v. bolivianus</i>		
Marcapata, Peru (three)	122, 124, 127	130, 132
Cuembi, Río Putumayo, Colombia (one)	129	134
Goyana, Rio Tapajóz, Brazil (one)	121	124 (worn)

[351. *Trogon strigilatus strigilatus* Linnaeus.

Trogon strigilatus Linnaeus, Syst. Nat., 12th ed., 1, p. 167, 1766—based on *Trogon cayanensis cinereus* Brisson, Orn., 4, p. 165, pl. 16, fig. 1, Cayenne.

Trogon viridis Reiser, pp. 100, 132—Anil, near São Luiz, and Miritiba, Maranhão.

The late Ferdinand Schwanda, as recorded by Reiser, forwarded three specimens to the Vienna Museum, a male taken at Anil on June 5, 1905, and male and female secured at Miritiba, on Jan. 21, 1908 and Dec. 16, 1907, respectively.

Dr. Snethlage did not meet with this species, which is widely dispersed throughout eastern South America, from Venezuela and Guiana to southern Brazil.]

352. *Momotus momota parensis* Sharpe.

Momotus parensis Sharpe, Cat. B. Brit. Mus., 17, p. 320, 1892—Pará.

Momotus brasiliensis (not of Latham) Reiser (1), p. 61, 1910—Santa Maria, on the road from Santo Antonio de Gilboez to Santa Philomena (spec. examined).

Momotus momota parensis Reiser (2), p. 132, 1925—Santa Maria, Piahy and opposite Boca de Galiota, Rio Parnahyba, Maranhão.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Oct. 30, Dec. 7, 1923; Rosario, ♂ ad., April 29, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 25, 1925; Tranqueira, three ♂♂, two ♀♀ ad., Aug. 27, 29, Sept. 8, 1925.

Additional specimens.—Maranhão: Miritiba, five ♂♂, one ♀ ad., F. Schwanda (Munich Museum).—Piahy: Santa Maria, road from Santo Antonio de Gilboez to Santa Philomena, ♂ ad., July 5, 1903. O. Reiser (Vienna Museum).

The series from the north coast (Tury-assú, Rosario, Miritiba) agrees in every respect with nine skins from the Pará district. The Inhuma bird and one male from Tranqueira (No. 1879) are likewise similar. Four other specimens from the last-named locality and the male obtained by Reiser at Santa Maria, Piahy have more chestnut on the neck. One of the males (No. 1805) is particularly conspicuous by having a complete chestnut collar around the hind neck, and corresponds to the description of *M. m. cametensis* Snethlage,¹ of which unfortunately no material is available for comparison. The Piahy bird and three from Tranqueira are more strongly suffused with tawny underneath than the rest of the series. There is also much individual variation in the shade of the green of the upper parts.

For the present, I do not see how the Motmots of the interior of Maranhão and Piahy can be separated, and I refer the whole series to *M. m. parensis*, whose range apparently extends from the right bank of the Tocantins through eastern Pará and Maranhão east to the Rio Parnahyba. From the Tapajóz westwards to the Purús and south to Goyaz, northern São Paulo, and Matto Grosso, it is represented by *M. m. simplex* Chapman,² without any, or with very little chestnut on the nape.³

[353. *Galbula albirostris cyanicollis* Cassin.

Galbula cyanicollis Cassin, Proc. Acad. Nat. Sci. Phila., 5, p. 154, pl. 7, 1852—Pará; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 66, 1926—Tury-assú, Maranhão.

¹Ornith. Monatsber., 20, p. 155, 1912—Cametá, Rio Tocantins.

²Bull. Amer. Mus. Nat. Hist., 48, p. 44, 1923—Santarém, Rio Tapajóz.

³Specimens examined.—Itaituba, Tapajóz 1; Rio Araguaya, Goyaz 3; Fazenda Esperança, Goyaz 1; Guardamor, Goyaz 2; Chapada, Matto Grosso 1; Villa Maria, Matto Grosso 1; Calama, Rio Madeira 1; Ponto Alegre, Rio Purús 3; Bom Lugar, Rio Purús 1; Cachoeira, Rio Purús 1.

Madame Snethlage's record of a specimen from Tury-assú extends the range of this Jacamar, known to inhabit the south bank of the Amazon, from Pará to northern Maranhão.]

354. *Galbula rufoviridis* Cabanis.

Galbula rufoviridis Cabanis in Ersch and Gruber, Allg. Encycl. Wiss. und Künste, 1st sect., 52, p. 308, 1851—Brazil; Reiser, (2), p. 123, 1925—Rio Parnahyba, Piahy.

Maranhão: Rosario, ♀ ad., Apr. 29, 1924; Codó, Cocos, ♂ ad., ♀ ad., June 19, 20, 1924; Barra do Corda, ♂ ad., Aug. 19, 1924; São Francisco, opposite Amarante, Rio Parnahyba, ♀ ad., July 4, 1925.

Ceará: Varzea Formosa, ♂ ad., Feb. 26, 1925.

Additional specimens.—Piahy: Parnaguá, ♀ ad., June 3, 1903; Santa Philomena, ♂ ad., ♂ imm., July 18, 1903. P. Wachsmund (Tring Museum).—Maranhão: Miritiba, two ♂♂, two ♀♀ ad., F. Schwanda (Munich Museum).

Identical with specimens from Bahia (Santo Amaro; São Marcello, Rio Preto), Minas Geraes (Rio das Velhas, near Lagôa Santa) and Matto Grosso (Descalvados, Urucúm de Corumbá).

This species is widely distributed in Brazil, ranging from Marajó and the south bank of the Amazon south to São Paulo and Matto Grosso, west to the Rio Madeira and into eastern Bolivia.

355. *Brachygalba lugubris lugubris* (Swainson).

Galbula lugubris Swainson, Anim. Menag., p. 329, Dec., 1837—"Conocou" [=Cuano or Canuku] Mountains of Demerara (type in British Museum examined).

Maranhão: Tury-assú, ♂ ad., three ♀♀ ad., Oct. 3, 10, 13, 1923; Rosario, ♂ ad., May 17, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 25, 1925.

Goyaz: Certeza, ♂ imm., Sept. 26, 1925.

I have no adults from north of the Amazon for comparison, but the immature Certeza bird agrees in every particular with specimens in corresponding plumage from the Serra da Lua, on the upper Rio Branco, Brazil.

The present record extends the range of the species from the lower Amazon to the Rio Parnahyba. Outside the Guianas and

eastern Venezuela (Caura Valley), it has been found at various places in northern Brazil: on the Rio Acará, south of Belém; at Baião, on the Rio Tocantins; north of the Amazon, at Monte Alegre and on the banks of the Rio Maecurú, and finally on the Rio Branco.

Farther south in Goyaz, on the Rio Araguaya, as well as in western Minas Geraes (Santo Domingo; Rio Jordão, near Araguay), northern São Paulo, and Matto Grosso, it is replaced by *B. lugubris melanosterna* Sclater,¹ which stretches west into eastern Bolivia (Gua-rayos) and reaches the northern extremity of its range on the Rio Curuá, a westerly tributary of the Iriri joining the Xingú, where Madame Snethlage secured a single female on August 16, 1909, at Malocca de Manuelsinho. This southern form is principally distinguished by the wholly or partly pale-colored lower mandible.

356. **Notharchus tectus tectus** (Boddaert).

Bucco tectus Boddaert, Tabl. Pl. Enl., p. 43, 1783—based on Daubenton, Pl. Enl. 688, fig. 2, Cayenne; Reiser, pp. 100, 123—Primeira Cruz, Maranhão.

Maranhão: Mangunça Island, ♀ ad., March 22, 1924.—Wing 78; tail 60; bill 24.

Additional specimen.—Maranhão: Primeira Cruz, ♂ ad., May 1, 1906. F. Schwanda (Vienna Museum).—Wing 78; tail 65.

Together with two females from Pará, these specimens are somewhat larger than skins from Surinam and Manáos, but I have not been able to examine a sufficient series.

N. t. tectus is one of those Guianan species whose range stretches through Lower Amazonia to the northern coast district of Maranhão.² I am not acquainted with its Upper-Amazonian representative *N. t. picatus* (Sclater).

357. **Nystalus maculatus maculatus** (Gmelin).

Alcedo maculata Gmelin, Syst. Nat., 1, (1), p. 451, 1788—based on "Le Martin-pescheur (sic) tacheté du Brésil" Brisson, Orn., 4, p. 524, ex "Matuitui" Marcgrave, Hist. Nat. Bras., p. 217, northeastern Brazil; we suggest Ceará.

Bucco maculatus Reiser, pp. 58, 123—Therezina, Piahy.

Nystalus maculatus nuchalis Cory, Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 2, p. 398, 1919—Juá, near Iguatú, Ceará.

¹P. Z. S. Lond., 23, p. 15, 1855—Goyaz.

²The specimen in the British Museum, said to be from "Pernambuco," is, of course, wrongly labeled.

Maranhão: Barra do Corda, ♂ ad., Aug. 11, 1924; Codó, Cocos, ♂ ad., three ♀ ♀ ad., June 14, 19, 21, 28, 1924.

Piauí: Ibiapaba, ♀ ad., Dec. 15, 1924; Arára, ♀ ad., Jan. 22, 1925.

Additional specimens.—Maranhão: Miritiba, ♀ ad., Oct. 12, 1907. F. Schwanda (Munich Museum).—Piauí: Therezina, ♂ ad., Aug. 17, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, two ♂ ♂, one ♀ ad., Aug. 7, 8, 1913; Quixadá, three ♂ ♂, three ♀ ♀, June and July, 1913; Serra de Baturité, ♀ ad., July 18, 1913. R. H. Becker.

Comparison with a series of twenty specimens from Bahia and Pernambuco fails to reveal any difference between birds from the various states of northeastern Brazil. The alleged characters of *N. m. nuchalis* are merely seasonal, the Ceará series being in perfect plumage, while the few Bahia specimens available at that time for comparison happened to be more or less worn. Furthermore, it is practically certain that Marcgrave's "Matuitui," the basis of *Alcedo maculata*, refers to the bird for which Cory provided the term *nuchalis*.

Two specimens from Marajó (Pacoval) and three from Santarém are not distinguishable from the general run of Bahia birds either.

N. m. maculatus is restricted to northeastern Brazil, south to Bahia, ranging north to Marajó and west to the Tapajóz (Santarém).

Near the sources of the Rio Araguaya, in southern Goyaz, it is represented by *N. m. parvirostris* (Hellmayr),¹ with shorter tail and much smaller bill, and in Matto Grosso by *N. m. pallidigula* Cherrie and Reichenberger,² with paler, ochraceous rather than tawny fore-neck, and striped instead of spotted chest and sides.

358. *Nystalus chacuru* (Vieillot).

Bucco chacuru Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 3, p. 239, 1816—based on Azara, No. 261, Paraguay; Reiser, pp. 58, 124—Santo Antonio de Gilboez and Corrientes, Rio Parnahyba, Piauí.

Maranhão: Codó, Cocos, two ♂ ♂ ad., June 11, July 10, 1924; Ponto (Canella), ♂ ad., Aug. 31, 1924.

Goyaz: Philadelphia, lower Tocantins, ♂ ad., Nov. 28, 1925.

¹*Bucco maculatus parvirostris* Hellmayr, Nov. Zool., 15, p. 86, 1908.

²Amer. Mus. Novit., 58, p. 6, 1923—Urucúm, de Corumbá.

Apparently not different from south-Brazilian and Paraguayan specimens. Bolivian and Peruvian birds average larger and are perhaps not quite so rufous above.

N. chacuru is widely distributed in Brazil, its range extending from the interior of Maranhão and Piauí south to Matto Grosso and Paraná. An inhabitant of the campo or open country, it is absent from the greater part of the Amazonian region, having been found only in a few isolated spots, such as Humaythá, on the upper Rio Madeira, Brazil, and near Moyobamba and in the Valley of Santa Ana, Peru.¹

359. *Malacoptila striata*² minor Sassi.

Malacoptila torquata minor Sassi, Journ. Orn., 59, p. 181, 1911—Miritiba, Maranhão (type in Vienna Museum examined); Reiser (2), p. 124, 1925—Miritiba.

Malaeoptila (sic) *torquata* (not *Bucco torquatus* Hahn) Reiser (1), p. 100—Maranhão.

Maranhão: Barra do Corda, (♂) ad., Sept. 3, 1924.—Wing 90; bill 24.

Additional specimens.—Maranhão: Miritiba, two ♂♂, one ♀, May 16, June 1, Aug. 8, 1907. F. Schwanda (Vienna Museum).

This northern form differs from *M. s. striata*, of southern Brazil, by decidedly smaller size (wing of male 83-90, against 92-99; of female 86, against 94-96 mm.), shorter and slenderer bill, less blackish ground color of head and upper back, with the central streaks much wider and brighter ochraceous buff, and much more extensive as well as much brighter ochraceous tawny pectoral area. The original series from Miritiba, besides, has the middle of the abdomen pure white, but the present example, in this respect, hardly differs from typical *striata*.

M. s. minor is yet only known from Maranhão, while *M. s. striata* inhabits southern Brazil, from southern Bahia (Caravellas) and Minas Geraes to Santa Catherina.

¹Recently separated by Sztolcman (Ann. Zool. Mus. Pol. Hist. Nat., 5, p. 214, 1926—type from Santa Ana) on account of their larger bills.

²*Bucco torquatus* Hahn (Vögel aus Asien, etc., Lief. 13, pl. 5, 1822—Brazil) being invalidated by *Bucco torquatus* Dumont (Dict. Sci. Nat., 4, p. 56, 1805), *Bucco striatus* Spix (Av. Bras., 1, p. 52, pl. 40, fig. 2, 1824—"in sylvis Rio de Janeiro, Bahia") becomes the specific name of the Banded Soft-wing. I cannot agree with my friend Reiser (l. c., p. 124) in referring Spix's account to the northern form (*M. s. minor*). While admitting that the plate is somewhat ambiguous, certain sentences in the description clearly point to the large southern race, and, in the absence of the type, the localities "Rio de Janeiro" and "Bahia" have more weight than the drawing of a notoriously inexperienced artist.

[360. *Monasa morphoeus morphoeus* (Hahn).

Bucco morphoeus Hahn, Vögel aus Asien, etc., Lief. 14, pl. 2, 1823—Brazil.

Bucco albifrons sive *leucops* Spix, Av. Bras., 1, p. 53, 1824—Piauhý.

Neither the Vienna Academy Expedition nor Dr. Snethlage met with this species, whose claims to be included in the fauna of Piauhý rest on Spix's record. As, however, specimens from the Pará district agree with others from Bahia and Rio de Janeiro, its occurrence in the intervening region can hardly be doubted.]

361. *Monasa nigrifrons* (Spix).

Bucco nigrifrons Spix, Av. Bras., 1, p. 53, pl. 41, fig. 2, 1824—Rio Solimões.

Monacha nigrifrons Reiser, pp. 58, 124—Bomfim above Nova York, Rio Parnahyba, Piauhý.

Maranhão: Tury-assú, ♀ ad., Oct. 10, 1923; São Bento, ♂ ad., Sept. 10, 1923; Codó, Cocos, ♂ ad., June 25, 1924; Tranqueira, ♀ ad., Sept. 3, 1925.

I am unable to separate this series and Lower-Amazonian specimens from others taken in eastern Peru. The length of the wing, regardless of sex, varies in birds from Maranhão from 122 to 132, in those from Peru from 119 to 128 mm. The largest specimen is a female from the city of Goyaz, with a wing of 136 mm., thus closely approaching the measurements given by Ihering and Ihering¹ for their supposed southern race *M. n. itapurana*, from Itapurá, northern São Paulo. An adult male from Rio Jordão, near Araguay, western Minas Geraes, in the same general region, however, measures only 131 mm. and casts strong doubts on its validity.

M. nigrifrons is widely distributed in Brazil, south of the Amazon, and in Peru, where it crosses the Marañón, ranging north into eastern Ecuador and east to the Rio Negro.

362. *Chelidoptera tenebrosa tenebrosa* (Pallas).

Cuculus tenebrosus Pallas, Neue Nord. Beytr., 3, p. 2, pl. 1, fig. 1, 1782—Surinam.

Chelidoptera tenebrosa Reiser, pp. 58, 124—Fazenda Riachoêlo (west of Santo Antonio de Gilboez), Riacho d'Ardeia, Santa Philomena, and below Colonia Floriano, Rio Parnahyba, Piauhý.

Maranhão: Tury-assú, ♂ ad., Oct. 23, 1923; Rosario, ♂ ad., two ♀ ♀ ad., May 9, 16, 19, 1924.

Additional specimens.—Maranhão: Miritiba, two ♀ ♀ ad., F. Schwanda (Munich Museum).

¹Cat. Faun. Braz., 1, p. 413, 1907.

In dimensions and restriction of the rufous abdominal area, these birds as well as two from the Rio Preto, n. w. Bahia, in the Vienna Museum agree with a large series of typical *tenebrosa* from the Guianas and Rio Branco. Specimens from Goyaz (Goyaz City and Leopoldina, Rio Araguaya) are slightly larger and *sometimes* a little paler on the abdomen, though still markedly darker than *C. t. brasiliensis*, of southeastern Brazil.

C. t. tenebrosa thus appears to range south to northern Goyaz and northwestern Bahia (Rio Preto), without appreciable change.

Birds from western Minas Geraes (Rio das Velhas, near Lagôa Santa), however, belong to the larger southern form *C. t. braziliensis* with much more extensive as well as paler, ochraceous buff rather than tawny abdominal area, whose distribution extends from São Paulo along the coast north to Bahia and perhaps even to Pernambuco.

363. **Ramphastos toco** Müller.

Ramphastos toco P. L. S. Müller, Natursyst., Suppl. p. 82, 1776—based on Daubenton, Pl. Enl. 82, Cayenne; Reiser, pp. 58, 121—Parnaguá and Rio Parnahyba, Piauhy.

Maranhão: Fazenda Inhuma, Alto Parnahyba, two ♂♂ ad., July 19, 20, 1925.

A third specimen from Maranhão, secured by F. Schwanda near Miritiba, I have examined in the Munich Museum.

Generally distributed in eastern South America from Guiana to southern Brazil and northern Argentina.

[364. **Ramphastos monilis** Müller.

Ramphastos monilis P. L. S. Müller, Natursyst., Suppl., p. 83, 1776—based on Daubenton, Pl. Enl. 262, Cayenne; Reiser (2), p. 122, 1925—Miritiba, Maranhão.

Rhamphastus erythrorhynchus Reiser (1), p. 100, 1910—Maranhão.

An adult male taken by F. Schwanda at Miritiba, on Feb. 5, 1908, in the Vienna Museum is the only definite record of this Guianan and Lower-Amazonian Toucan from Maranhão.]

365. **Ramphastos ariel** Vigors.

Ramphastos ariel Vigors, Zool. Journ., 2, No. 8, p. 466, pl. 15, 1826—Rio de Janeiro; Reiser (2), p. 122, 1925—Miritiba, Maranhão.

Maranhão: Tury-assú, Alto de Alegria, ♂ ad., Nov. 21, 1923.

Additional specimen.—Maranhão: Miritiba, ♀ ad., Dec. 15, 1907. F. Schwanda (Munich Museum).

An east-Brazilian species, ranging from the south bank of the lower Amazon to Santa Catharina, although records are lacking for its occurrence in either Ceará or Piauhý.

366. **Ramphastos theresae** Reiser.

Ramphastos theresae Reiser, Anz. Ak. Wiss. Wien, 42, No. 18, p. 321, 1905—upper Parnahyba, Piauhý (type in Vienna Museum examined); Reiser, pp. 58, 122—Ponta da Serra, near Santa Philomena, and São Miguel, near Remanso de Coco, Rio Parnahyba, Piauhý.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♀ ad., Aug. 6, 1925.—Wing 190; tail 170; bill 115.—“Iris and feet blue, bill black, pale basal band yellow, bare skin round the eye blue.”

Additional specimens.—Piauhý, Alto Parnahyba: São Miguel, ♀ ad., July 29, 1903 (type); Ponta da Serra, ♀ ad., July 10, 1903. O. Reiser (Vienna Museum).

This specimen differs from the types by decidedly longer bill and by lacking the small pale blue spot at the base of the culmen.

R. theresae is nearly related to *R. ariel*, but may be distinguished, in addition to its smaller bill, by pale greenish yellow (instead of red) upper tail coverts; by the light cadmium (instead of deep orange) throat and foreneck, passing into empire yellow on the chin and into martius yellow on the cheeks and lateral border of the throat; and by having but a restricted band across the chest instead of the entire breast red.

R. theresae is as yet known only from the upper Parnahyba in Piauhý and Maranhão. Together with *R. ariel* and *R. vitellinus* it forms a natural section in the genus *Ramphastos*, and it is quite probable that further researches will show these three Toucans to be geographical races of a single systematic unit.

367. **Pteroglossus aracari aracari** (Linnaeus).

Ramphastos aracari Linnaeus, Syst. Nat., 10th ed., 1, p. 104, 1758—based on “Araçari” Marcgrave, Hist. Nat. Bras., p. 217, northeastern Brazil.

Pteroglossus aracari Reiser (1), p. 58, 1910—opposite Matto Bom, Rio Parnahyba, Maranhão; idem (2), p. 122, 1925—Matto Bom, Primeira Cruz, Bôa Vista, and Miritiba, Maranhão.

Maranhão: Tury-assú, ♀ ad., Oct. 31, 1923; Tranqueira, ♂ ad., Sept. 1, 1925.

Seven more specimens from various places in the coast region of Maranhão (Primeira Cruz, Bôa Vista, Miritiba), collected by the late F. Schwanda, and an adult male from opposite Matto Bom, Rio Parnahyba, taken on July 28, 1903 by Wachsmund, have been examined in the Museums at Vienna and Munich.

P. a. aracari is widely distributed throughout eastern Brazil from Marajó and the south bank of the Amazon south at least to Bahia. North of the Amazon it is replaced by *P. a. atricollis* (Müller).¹

[368. *Pteroglossus bitorquatus bitorquatus* Vigors.

Pteroglossus bitorquatus Vigors, Zool. Journ., 2, p. 481, 1826—no locality given; Reiser, pp. 100, 122—Miritiba, Maranhão.

Maranhão: Miritiba, ♀ ad., ♂ juv., May 10, 19, 1907. F. Schwanda (Vienna Museum).

This beautiful Toucan is peculiar to eastern Pará, east of the Tocantins, and the adjoining section of northern Maranhão. Other races are found on the lower Amazon and Rio Madeira.]

369. *Pteroglossus inscriptus inscriptus* Swainson.

Pteroglossus inscriptus Swainson, Zool. Ill., 2, pl. 90, 1821—"from the interior of Guayana," errore; Reiser, pp. 100, 123—Maranhão.

Maranhão: Tury-assú, ♀ ad., Oct. 6, 1923; São Bento, ♀ ad., Sept. 5, 1923.

Additional specimens.—Maranhão: Miritiba, ♂ ad., three ♀ ♀ ad., May 23, June 17, Aug. 8, 1907. F. Schwanda (Munich Museum).

This Lower-Amazonian Toucan ranges east to Pernambuco, whence there is an adult female in the Tring Museum, secured by A. Robert at São Lourenço on August 13, 1903. Along the Rio Madeira and in western Matto Grosso it gradually merges into the Upper-Amazonian *P. i. humboldti* Wagler.²

370. *Coccyzus euleri* (Cabanis).

Coccyzus euleri Cabanis, Journ. Orn., 21, p. 72, 1873—Cantagallo, state of Rio de Janeiro (type in Berlin Museum examined).

¹*Ramphastos atricollis* P. L. S. Müller (Natursyst., Suppl., p. 83, 1776) is exclusively based on Daubenton's Pl. Enl. 166. Although this indifferent plate bears the legend "Toucan vert, du Brésil," it is quite evident from Buffon's text (Hist. Nat. Ois., 7, p. 126) that his description refers to the Guianan bird, while the locality "Brésil" was taken from Marcgrave's "Araçari," considered to be identical. See also Berlepsch and Hartert, Nov. Zool., 9, p. 102, 1902; Berlepsch, l. c., 15, p. 281, 1908.—*P. roraimae* Brab. and Chubb (Ann. Mag. Nat. Hist., (8), 10, p. 261, 1912) is thus a pure synonym of *P. a. atricollis*.

²See Hellmayr, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, pp. 69-70, 1912.

(?) *Coccyzus americanus* Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 66, 1926—São Bento, Maranhão.

Maranhão: Rosario, ♀ ad., May 6, 1924.—Wing 138; tail 146; bill 25.—“Iris brown, feet gray, bill black, lower mandible and edge at base of maxilla yellow.”

Except for slightly larger size, this bird agrees with the type of *Coccyzus lindeni* Allen,¹ from Santarém, in the Museum of Comparative Zoology, Cambridge.

In another place² I have at length discussed the characters and range of this rare Cuckoo. Since then, additional specimens have been listed from Ciudad Bolívar and Caicara, Río Orinoco, Venezuela,³ and Supenaam River, British Guiana,⁴ and the present example adds another locality to the previous records.

Its range is now known to extend from Dutch and British Guiana and the banks of the Orinoco south to Matto Grosso (Chapada) and São Paulo (Paciencia).

Mr. Ridgway⁵ believes the type of *Coccyzus julieni* Lawrence⁶ to be a young bird of the present species, which he regards as a race of the Yellow-billed Cuckoo; but in view of certain discrepancies in the description and the widely separated habitat, I rather hesitate to accept this association without further evidence. Lawrence's type, taken on October 20, might, of course, have been a straggler from South America, though Mr. Ridgway suggests the possibility that the so-called *C. americanus* breeding in the West Indies may be *julieni*. A series of Cuckoos, obtained by Geo. K. Cherrie in Santo Domingo in the first week of May, some of them marked “breeding,” in the collection of Field Museum, are, however, all *C. a. americanus*, with an extensive rufous area on the wings.

371. *Coccyzus melacoryphus* Vieillot.

Coccyzus melacoryphus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 8, p. 271, 1817—based on Azara, No. 267, Paraguay.

¹Bull. Essex Inst., 8, p. 81, 1876.—Dr. Allen's description is somewhat misleading, since the type shows just a faint grayish shade on throat and foreneck, no more than is noticeable in other specimens.

²Nov. Zool., 20, pp. 252-253, 1913.

³Cherrie, Sci. Bull. Brookl. Mus., 2, p. 311, 1916.

⁴Chubb, Birds Brit. Guiana, 1, p. 438, 1916.

⁵Bull. U. S. Nat. Mus., 50, Part 7, p. 19, 1916.

⁶Ann. Lyc. Nat. Hist. N. Y., 8, pp. 42, 98, 1864—Sombrero Island, Lesser Antilles.

Coccyzus melanocoryphus Reiser, pp. 59, 125—Lagôa Missão and Burity, near Parnaguá, Piauhý.

Ceará: Varzea Formosa, ♂ ad., March 4, 1925.

Additional specimens.—Ceará: Quixada, two ♂♂, three ♀♀, June 26, 1913. R. H. Becker.

Generally distributed in South America.

372. *Piaya cayana* subsp.

Piaya cayana (not *Cuculus cayanus* Linnaeus) Reiser (2), p. 125, 1925—part, Bôa Vista, Maranhão.

Maranhão: Tury-assú, ♂ ad., adult (unsexed), Dec. 4, 12, 1923.

Additional specimens.—Maranhão: São Luiz, ♀ imm., June 10, 1905 (Sophia Museum); Bôa Vista, ♂ ad., Feb. 5, 1907 (Vienna Museum); Miritiba, ♀ ad., F. Schwanda (Munich Museum).

Birds from the coast of Maranhão and the adjoining Pará district cannot be united with any known form, and obviously constitute a recognizable race, which I am, however, unwilling to name before its range can be more accurately defined. In another communication¹ I identified it with *P. cayana pallescens* of Cabanis and Heine,² but upon examination of the type in the Heine Collection, this name proves to be referable to the Bahian form.

The twelve specimens from Maranhão, Pará, and Marajó stand just between *P. c. pallescens*, of Bahia and Piauhý, and *P. c. obscura* Snethlage, of Amazonia (Rio Madeira to eastern Peru), combining the deep auburn upper parts of the latter with the pale (neutral) gray ventral surface of the former. The westward extension of its range cannot be determined owing to lack of material from Lower Amazonia. Two specimens from Borba, Rio Madeira appear to belong with *P. c. obscura*.

[373. *Piaya cayana pallescens* (Cabanis and Heine).

Pyrhococcyx pallescens Cabanis and Heine, Mus. Hein., 4, (1), p. 86, 1862—Northern Brazil = Bahia (type examined).

Piaya cayana (not *Cuculus cayanus* Linnaeus) Reiser, pp. 59, 125—Parnaguá and Santa Philomena, Piauhý.

Piauhý: Paranaguá, ♂ ad., May 16, 1903. O. Reiser (Vienna Museum).

¹Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 71, 1912.

²*Pyrhococcyx pallescens* Cabanis and Heine, Mus. Hein., 4, (1), p. 86, 1862—"Northern Brazil."

The only specimen from Piauhý resembles birds from Bahia (Santo Amaro; Macaco Secco, near Andarahy; Fazenda Tabôa and São Marcello, Rio Preto), some of which were directly compared and found identical with the type of *P. pallescens* in the Heine Collection.

In addition to its shorter tail, this form is easily distinguished from the South Brazilian *P. c. macroura* by much brighter and clearer rufous (hazel or kaiser brown) upper, and much paler grayish under parts, without any black on thighs, vent, or tail coverts.

Its range appears to be restricted to the states of Bahia, Piauhý, and Pernambuco, in central eastern Brazil.

Farther south, from Minas Geraes, Espirito Santo, and Rio de Janeiro down to Rio Grande do Sul, the long-tailed, deeply colored *P. c. macroura* Gambel takes its place.]

374. *Piaya cayana cearae* Cory.

Piaya cayana cearae Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 304, 1915—Juá, near Iguatú, Ceará.

Ceará: Juá, near Iguatú, two ♂♂, two ♀♀ ad., July 30, Aug. 11, 20, Sept. 1, 1913; Quixada, ♀ ad., June 27, 1913. R. H. Becker.

This seems to be a valid form. Though nearly related to, it may be separated from, *P. c. pallescens* by decidedly paler, more whitish under parts, the difference being particularly pronounced on the thighs and crissum; the strongly rufescent tinge on the under surface of the lateral rectrices; slightly lighter rufous upper parts, etc. It is known only from Ceará.

[375. *Tapera naevia naevia* (Linnaeus).

Cuculus naevius Linnaeus, Syst. Nat., 12th ed., 1, p. 170, 1766—based on Brisson, Orn., 4, p. 128, Cayenne.

Diplopterus naevius Reiser, pp. 59, 126—Burity, Pé do Morro, and Queimadas, Rio Parnahyba, Piauhý.

The distinction of a southern form *T. naevia chochi*¹ seems to me more than problematical. In measuring a large number of specimens from various localities, I find so much individual variation in size that I fail to see how dimensions can be used as a criterion for the maintenance of two races in South America. It is, however, possible that southern birds average slightly browner above, although there is much seasonal change in this respect.]

¹See Bangs and Penard, Bull. Mus. Comp. Zool., 62, p. 50, 1918.

376. *Neomorphus geoffroyi* (Temminck).

Coccyzus geoffroyi Temminck, Nouv. Rec. Pl. Col., livr. 2, pl. 7, 1820—no locality given, hab. subst. Bahia, Brazil (auct. Hellmayr, Nov. Zool., 12, p. 298, 1905).

Maranhão: Tury-assú, ♂ ad., two ♀ ♀ ad., Oct. 15, 25, Dec. 12, 1923.—“Iris yellow and red, feet pale gray, bill greenish yellow, black at base.”

This beautiful Cuckoo has a rather wide distribution in Brazil south of the Amazon, ranging from Pará to Espírito Santo, west to the Rio Madeira. The Maranhão examples agree with others from Amazonia (Pará region and Rio Madeira). I have seen no material from southern Brazil.¹

Represented by nearly allied species (or races) in Upper Amazonia.

[377. *Dromococcyx phasianellus* (Spix).

Macropus phasianellus Spix, Av. Bras., 1, p. 53, pl. 42, 1824—Tonantins, Rio Solimões, Brazil.

Dromococcyx phasianellus Reiser, pp. 59, 126—Parnaguá and below União, Rio Parnahyba, Piahy.

Piahy: Parnaguá, ♀ ad., June 13, 1903; two ♂ ♂, one ♀ ad., below União, Rio Parnahyba, Aug. 25, 26, 1903. O. Reiser (Vienna Museum).

Widely distributed throughout Central and South America south to São Paulo and Matto Grosso.]

378. *Guira guira* (Gmelin).

Cuculus Guira Gmelin, Syst. Nat., 1, (1), p. 414, 1788—based on Brisson (ex Marcgrave), northeastern Brazil.

Guira guira Reiser, pp. 59, 127—Pedrinha, Lake Parnaguá, Piahy.

Maranhão: Tury-assú, ♀ ad., Nov. 29, 1923; Mangunça Island, ♀ ad., Feb. 27, 1924; São Luiz, ♂ ad., July 26, 1923.

Additional specimens.—Ceará: Juá, near Iguatú, three ♂ ♂, July 31, Aug. 18, 1913; Quixada, two ♂ ♂, two ♀ ♀, June 16, 19, 25, 1913. R. H. Becker.

The Guira Cuckoo ranges all over eastern Brazil, from the islands of Marajó and Mexiana south to Matto Grosso and Rio Grande do Sul, extending into Paraguay, Uruguay, and Argentina.

¹Birds from Espírito Santo have recently been described by Madame Snethlage as *Neomorphus dulcis* (Orn. Monatsber., 35, p. 80, 1927), and while they appear to be subspecifically different from the Amazonian representative, the type in the Leiden Museum should be examined to make sure of the proper application of Temminck's name.

379. *Crotophaga major* Gmelin.

Crotophaga major Gmelin, Syst. Nat., 1, (1), p. 363, 1788—based on Brisson and Buffon, Cayenne; Reiser, pp. 59, 126—Ilha Grande, Lake Parnaguá, Piauhý.

Maranhão: Tury-assú, ♂ ad., Oct. 30, 1923; Mangunça Island, ♂ ad., Feb. 29, 1924.

Generally distributed in South America.

380. *Crotophaga ani* Linnaeus.

Crotophaga ani Linnaeus, Syst. Nat., 10th ed., 1, p. 105, 1758—based on Browne and Sloane (Jamaica), and Marcgrave (northeastern Brazil); Reiser, (2), p. 127, 1925—Miritiba, Maranhão.

Crotophaga sulcirostris (?) (not of Swainson) Reiser (1), p. 100—Maranhão.

Maranhão: São Bento, ♂ ad., Sept. 13, 1923; Mangunça Island, ♂ ad., March 22, 1924.

Widely diffused in the West Indies and in Central and South America.

[381. *Anodorhynchus hyacinthinus* (Latham).

Psittacus hyacinthinus Latham, Ind. Orn., 1, p. 84, 1790—no locality indicated, = Brazil.

Anodorhynchus hyacinthinus Reiser (1), p. 56, 1910—Xingú, near Santa Maria, on the road from Santo Antonio de Gilboez to Santa Philomena, Piauhý; idem (2), p. 112, 1925—upper Rio Parnahyba, Piauhý.

The Vienna Academy Expedition met with the Blue Macaw at numerous localities along the Rio Parnahyba. The last flocks were seen at São Miguel and São Estevão. Two specimens from the Alto Parnahyba in the Tring Museum examined.

A. hyacinthinus is peculiar to the interior of Brazil, from the Amazon south to São Paulo and Matto Grosso.]

[382. *Ara ararauna* (Linnaeus).

Psittacus ararauna Linnaeus, Syst. Nat., 10th ed., 1, p. 96, 1758—"in America meridionale"; we accepted Pernambuco (ex Marcgrave) as type locality.¹

Ara ararauna Reiser, pp. 56, 114—Lagôa Saco, Brejão, and Riacho d'Ardeia, Piauhý.

Specimens of this Macaw were obtained by the Vienna Academy Expedition in southern Piauhý. The species is widely distributed in tropical South America.]

¹See Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 577, 1906.

[383. *Ara chloroptera* Gray.

Ara chloropterus Gray, List. Birds Brit. Mus., 3, Psittaci, p. 26, 1859—based on *Macrocerus macao* Vieillot, etc., type from British Guiana.

Ara chloroptera Reiser, pp. 56, 115—Parnaguá and Riacho da Varzea Grande, near Santo Antonio de Gilboez, Piauhý.

Not met with by Dr. Snethlage. The Vienna Academy Expedition secured several examples of this widespread species in southern Piauhý.]

[384. *Ara maracana* (Vieillot).

Macrocerus maracana Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 2, p. 260, 1816—based on Azara, No. 274, Paraguay and La Plata River.

Ara maracana Reiser, pp. 56, 116—Parnaguá, Piauhý.

The Vienna Academy Expedition secured several examples on the shores of Lake Parnaguá, Piauhý.

This Macaw is a native of Paraguay and eastern Brazil, ranging as far north as the island of Marajó.]

[385. *Orthopsittaca manilata* (Boddaert).

Psittacus manilatus Boddaert, Tabl. Pl. Enl., p. 52, 1783—based on Daubenton, Pl. Enl. 864, Cayenne.

Ara macavuanna Reiser, pp. 56, 116—Santa Maria, on the trail from Santo Antonio de Gilboez to Santa Philomena, Piauhý.

We have no specimens from Piauhý, but two from São Marcello, Rio Preto, in the neighboring state of Bahia.

O. manilata is generally distributed in northern South America, from Guiana south to Peru, Matto Grosso, and Bahia.]

[386. *Cyanopsitta spixii* (Wagler).

Sittace spixii Wagler, Abhandl. Ak. Wiss. München, 1, p. 675, 1832—"in Brasilia, versus flumen Amazonum," errore (the type examined in the Munich Museum was obtained on the banks of the São Francisco River near Joazeiro, state of Bahia).

Cyanopsittacus spixi Reiser (2), p. 114, 1925—Lake Parnaguá, Piauhý.

A few examples of Spix's Macaw, one of the greatest rarities among South American Parrots, were observed by Otmar Reiser in June 1903 in the vicinity of Parnaguá, Piauhý. This is the only record since its discovery by Spix more than one hundred years ago. Dr. Snethlage unfortunately did not meet with the species.]

387. *Diopsittaca nobilis cumanensis* (Lichtenstein).

Psittacus cumanensis Lichtenstein, Verz. Dubl. Berliner Mus., p. 6, 1823—Brazil.¹

Ara nobilis (not *Psittacus nobilis* Linnaeus) Reiser, pp. 57, 117—Pedrinha (Lake Parnaguá), Santa Philomena, and junction of the Rio Sucuriú, Rio Parnaíba, Piauí.

Maranhão: Tury-assú, two ♀ ♀ ad., ♀ imm., Nov. 27, Dec. 20, 21, 1923; Rosario, ♀ ad., May 16, 1924; Codó, Cocos, ♀ ad., June 13, 1924.

Goyaz: Philadelphia, lower Tocantins, ♂ ad., Nov. 30, 1925.

Additional specimen.—Maranhão: Miritiba, ♂ imm., March 9, 1909. F. Schwanda.

This species is widely distributed in Brazil south of the Amazon Valley, ranging from Pará (Cajetuba), Maranhão and northern Goyaz to São Paulo and extending west into Matto Grosso. North of the Amazon, on the Rio Branco as well as in Guiana and eastern Venezuela (Caura Valley) it is replaced by the smaller, partly black-billed *D. n. nobilis* (Linnaeus).

[388. *Thectocercus acuticaudatus haemorrhous* (Spix).

Aratinga haemorrhous Spix, Av. Bras., 1, p. 29, pl. 13, 1824—"in Campo Alegre Bahiae" (types in Munich Museum examined).

Conurus haemorrhous Reiser (1), p. 57, 1910—Parnaguá, Piauí.

Aratinga (*Conurus*) *haemorrhous* Reiser (2), p. 119, 1925—Parnaguá.

¹*Psittacus cumanensis* Lichtenstein is evidently the earliest available name for the southern form of this Macaw with pale upper, and blackish lower mandible. The characters "rostrum validiore mandibula nigra, genis nudis immaculatis, fronte cyanea" are just the points of distinction from "*Psittacus guianensis* Gmelin" [= *Aratinga leucophthalma* (Müller)], with which Lichtenstein compared his supposed novelty. The specific name apparently was derived from the Bay of Cuman, Maranhão, which we suggest as type locality.

Psittacus nobilis Linnaeus (Syst. Nat., 10th ed., 1, p. 97, 1758), universally accepted for the southern race, obviously refers to *Psittacara hahni* Souancé (Rev. Mag. Zool., (2), 8, p. 58, 1856—"Colombie"). It is true Linnaeus merely gives "America meridionalis" as its habitat, and the short diagnosis might apply to either form. However, on turning to his first reference (Mus. Ad. Frid., 2, Prodr. p. 13, 1764), we find there a more complete description of the bird; and while nothing is said about the coloration of the bill, the statement "Habitat Surinami" clearly indicates the northern form. It might be argued that, no mention being made of the bluish forecrown, the description would seem to correspond even better with *Aratinga leucophthalma*, likewise found in Guiana. This species, however, has only a limited bare space round the eye, while Linnaeus, for his *Psittacus nobilis*, uses the same expression ("genis nudis") as he does in the case of *Psittacus* [= *Ara*] *severus*. Under these circumstances, I do not see how we can well avoid calling the Guianan bird *Diopsittaca nobilis nobilis* (Linnaeus) 1758, of which *Psittacara hahni* Souancé 1856 becomes a synonym.

Piauhy: Parnaguá, ♀ ad., May 25, 1903. O. Reiser (Vienna Museum).

Except for possessing a few brownish red feathers in the middle of the abdomen—no doubt, an individual variation—this bird was found to agree with others from the São Francisco River, Bahia.

This Paroquet merely differs from *T. a. acuticaudatus* by lacking the blue on the sides of the head and throat and by its pale (instead of blackish) mandible, and is clearly but subspecifically distinct. It has been recorded from various localities in Bahia and from southern Piauhy, but may have a more extensive range, since the validity of *Conurus neoxenus* Cory,¹ from Venezuela, is extremely doubtful. Birds from Urucúm de Corumbá, Matto Grosso, in coloration, are somewhat intermediate between *acuticaudatus* and *haemorrhous*, but agree with the former in the blackish lower mandible.]

[389. *Aratinga guarouba* (Gmelin).

Psittacus guarouba Gmelin, Syst. Nat., 1, (1), p. 320, 1788—based on (Brisson ex) Marcgrave, Hist. Nat. Bras., p. 207: "Quiubatuí," northeastern Brazil.

Conurus guarouba Hellmayr, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, p. 73, 1912—Serra do Pirocaua, Maranhão.

Maranhão: Serra do Pirocaua, ♂ ad., Dec. 27, 1909. F. Lima (Munich Museum).

This striking species has of late been recorded only from the south bank of the lower Amazon (Xingú to Pará) and Maranhão, but doubtless ranges farther east, since it was first described by Marcgrave, who did not extend his researches beyond the western limits of Ceará.]

390. *Aratinga jandaya* (Gmelin).

Psittacus jandaya Gmelin, Syst. Nat., 1, (1), p. 319, 1788—based on (Brisson ex) Marcgrave, Hist. Nat. Bras., p. 206: "Jendaya," northeastern Brazil.

Aratinga chrysocephalus Spix, Av. Bras., 1, p. 30, pl. 14, 1824—Piauhy (types in Munich Museum examined).

Conurus jendaya Reiser (1), p. 57, 1910—Fazenda do Saco, Santa Maria, and Ponta da Serra, near Santa Philomena, Piauhy.

Aratinga (Conurus) jendaya Reiser (2), p. 117, 1925—Piauhy.

Maranhão: Tury-assú, ♂ ad., ♀ ad., Oct. 10, 18, 1923; Grajahú, ♂ ad., Oct. 28, 1924; Tranqueira, two ♂ ad., ♀ imm., Sept. 9, Oct. 12, 1925.

¹Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 243, 1909—Margarita Island, Venezuela.

Additional specimens.—Maranhão: Primeira Cruz, ♂ ad., July 10, 1906 (Field Museum); Miritiba, ♂ ad., ♀ ad., 1907. F. Schwanda (Munich Museum).—Ceará (unspecified), one adult (Berlepsch Collection).—Piauhy (unspecified), three adults. J. B. Spix (Munich Museum).

The immature differs only by smaller bill, duller throat, and by having the crown streaked with green.

This Paroquet is peculiar to northeastern Brazil (states of Maranhão, Piauhy, and Ceará),¹ and does not even occur at Pará.

A. a. auricapilla (Kuhl), of Bahia, which we have from Macaco Secco, near Andarahy, and *A. a. aurifrons* (Spix), of southern Brazil, are probably geographic races of *A. jandaya*.²

391. *Aratinga leucophthalma leucophthalma* (Müller).

Psittacus leucophthalmus P. L. S. Müller, *Natursyst.*, Suppl., p. 75, 1776—based on Daubenton, Pl. Enl. 407, Cayenne.

Conurus leucophthalmus Reiser (1), p. 57, 1910—Burity, Lagôa Missão, and Cachoeira, Rio Parnahyba, Piauhy.

Aratinga (Conurus) leucophthalmus Reiser (2), p. 118, 1925—same localities.

Maranhão: Tury-assú, ♀ ad., Dec. 4, 1923; Tranqueira, ♂ ad., Sept. 11, 1925.

Additional material examined since the publication of my notes³ seems to indicate that there is no ground for recognizing a southern race (*C. propinquus* Sclater), the alleged difference in size proving to be nonexistent. The range of *A. l. leucophthalma* thus extends from Guiana through the greater part of Amazonia down to northern Argentina, Paraguay, and southern Brazil. On the other hand, *A. l. callogenys* (Salvadori), of eastern Ecuador, is evidently separable, as shown by Chapman,⁴ although immature and female examples are hardly distinguishable from the typical bird.

392. *Aratinga cactorum caixana* Spix.

Aratinga caixana Spix, Av., Bras., 1, p. 34, pl. 19, fig. 1, 1824—no locality indicated; we suggest Caxias, Piauhy (type in Munich Museum examined).

Aratinga cactorum perpallida Cory, *Field Mus. Nat. Hist. Pub., Zool. Ser.*, 13, Part 2, No. 1, p. 59, 1918—Juá, Ceará.

¹Its occurrence in Pernambuco is open to doubt.

²See *Abhandl. 2. Kl. Bayr. Ak. Wiss.*, 22, No. 3, pp. 581-583, 1906.

³*Nov. Zool.*, 14, p. 85, 1907.

⁴*Bull. Amer. Mus. Nat. Hist.*, 55, p. 258, 1926.

Conurus cactorum (not of Kuhl) Reiser (1), p. 57, 1910—part, island near Sambaiba, Rio São Francisco and Fazenda da Serra, Rio Grande, Bahia; Olho d'Agua, near Parnaguá, Piauhý.

Conurus (Aratinga) cactorum Reiser (2), p. 118, 1925—part, near Sambaiba, Rio Grande, and Piauhý.

Piauhý: Ibiapaba, two ♂♂ ad., four ♀♀ ad., Dec. 14, 16, 26, 1924, Jan. 13, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., Aug. 7, 1913. R. H. Becker (type of *A. c. perpallida* Cory).—Brazil (unspecified), unsexed adult (type of *A. caixana* Spix) (Munich Museum).

In my revision of Spix's types¹ I remarked on the paler coloration, particularly below, of the original example of *A. caixana* and other specimens of this Paroquet from the Rio Grande, in northwestern Bahia, when compared with the types of *A. flaviventer* Spix² and an adult from Solidade, south of Joazeiro, but owing to lack of sufficient material I was in doubt as to the significance of this variation. The series now forwarded by Dr. Snethlage clearly demonstrates the existence of two races, although their ranges can at present only approximately be circumscribed.

Psittacus cactorum Kuhl³ was based on specimens in Wied's collection, obtained, as we learn from the account of his travels,⁴ at Vareda, Rio Pardo and near Os Possões, in southeastern Bahia. Birds from Rio do Peixe, near Queimadas, Bahia, in Field Museum substantially agree with Kuhl's and Wied's description, having the throat and chest tawny olive and the middle of the belly decidedly orange (deep chrome or cadmium yellow). The two typical examples of *A. flaviventer* Spix as well as an adult male taken by O. Reiser at Solidade, south of Joazeiro, in northern Bahia are similar. Spix gives Contendas (in northern Minas Geraes), Joazeiro, and Piauhý as localities for *A. flaviventer*, but as the latter state is tenanted by another form it follows that his types must have come from either Contendas or Joazeiro.

The series from Piauhý, the specimen from Ceará (type of *A. c. perpallida*), and two adults from the northwestern section of Bahia (♀ ad., Sambaiba, near Barra, April 2, 1903; ♂ ad., near Fazenda

¹Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 583-584, 1906.

²Av. Bras., 1, p. 33, pl. 18, 1824—"prope Contendas ac Joazeiro, et in Piauhý."

³Consp. Psitt., p. 82, 1820.

⁴Reise Brasil., 2, pp. 168, 231, 1821.

da Serra, Rio Grande, April 11, 1903; O. Reiser), together with one from Pernambuco, collected by W. Swainson, in the Vienna Museum, are markedly paler, with the green of the upper parts lighter, the throat and chest buffy citrine or olive lake, and the center of the abdomen less orange, nearest to light cadmium. The original specimen of *A. caixana*, a cage-bird with clipped wing- and tail-feathers,¹ apart from a few xanthochroistic feathers on the wings, is practically identical with the type of *A. c. perpallida*, due allowance being made for its faded condition. While Spix fails to mention any locality, the specific term may have been intended as the latinized form of Caxias, a city in eastern Maranhão, visited by the Bavarian Expedition to Brazil.

A. c. caixana thus seems to range from Maranhão and Piauhý east to Pernambuco, encroaching on the northwestern section of Bahia (Rio Grande district), while south of the Rio São Francisco its place is taken by the darker, brown-chested *A. c. cactorum* (Kuhl).

393. *Aratinga*² *aurea aurea* (Gmelin).

Psittacus aureus Gmelin, Syst. Nat., 1, (1), p. 329, 1788—based on (Brisson ex) Edwards, Glean. Nat. Hist., 5, pl. 235—"supposed to be a native of Brazil."

Conurus aureus Reiser (1), p. 57, 1910—Lake Parnaguá, Piauhý; idem (2), p. 119, 1925—Lake Parnaguá and Riacho Novo, Piauhý.

Maranhão: Grajahú, ♀ ad., Oct. 18, 1924; Tranqueira, ♀ ad., Sept. 5, 1925; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 25, 1925; Codó, Cocos, three ♂♂ ad., June 28, July 5, 10, 1924.

Piauhý: Deserto ♂ ad., April 8, 1925.

Goyaz: Philadelphia, lower Tocantins, two ♀♀ ad., Nov. 23, 1925.

Additional specimens.—Maranhão: Miritiba, ♂♀ ad., F. Schwanda. (Munich Museum).

Agreeing with specimens from other parts of Brazil (Santarém, Rio Preto, Bahia, etc.). Certain individuals from southern Matto Grosso (Piraputanga), in size, closely approach the recently separated Paraguayan form *A. aurea major*.³

¹The plate in Spix's work is utterly unrecognizable, the plump stout figure giving the impression of some species of *Amazona* rather than of a *Paroquet*. Fortunately, the type permits the proper identification of the species.

²The genus *Eupsittula* appears to be inseparable from *Aratinga*.

³*Eupsittula aurea major* Cherrie and Reichenberger, Amer. Mus. Novit., 58, p. 3, 1923—Puerto Pinasco, Paraguay (type examined).

A. a. aurea is distributed over the greater part of Brazil, from the north bank of the lower Amazon south to São Paulo and Matto Grosso, and west to the Rio Madeira. It is probably conspecific with *A. aeruginosa* (Linnaeus) and allies.

394. *Pyrrhura leucotis griseipectus* Salvadori.

Pyrrhura griseipectus Salvadori, Ibis, (7), 6, p. 672, 1900—locality unknown (type in Turin Museum examined).

Ceará: Serra de Baturité, five ♂♂, one ♀ ad., one unsexed adult, July 12, 15, 18, 22, 1913. R. H. Becker.

I believe these are the first specimens taken in a wild state. Compared with nine skins of true *P. l. leucotis* (Kuhl) from Bahia and Rio de Janeiro, the series merely differs by more purely white auriculars, with hardly any trace of brownish edges, and by having the lower throat and chest mouse gray or dusky gray instead of greenish. The feathers of these parts are, however, similarly marked, having a broad buffy or whitish subterminal band, followed by a narrow dusky apical margin. The bill is, on average, slightly larger.

The type, a cage-bird of unknown origin, and an adult female in the Pará Museum (No. 5608), brought from Ceará, which had likewise been kept in captivity, are somewhat larger (wing 125, against 112-117; tail 135, against 117-125 in the Serra de Baturité series), but agree in coloration.

P. l. griseipectus is recorded only from Ceará, where it obviously replaces *P. l. leucotis*, the latter being restricted to the littoral of eastern Brazil, from Bahia south to Rio de Janeiro. A third race of this group, *P. l. emma* Salvadori, inhabits the Caribbean coast of Venezuela, from Sucre to Caracas.

395. *Pyrrhura picta amazonum* Hellmayr.

Pyrrhura picta amazonum Hellmayr, Bull. Brit. Orn. Cl., 19, p. 8, 1906—Obidos, lower Amazon.

Goyaz: Santo Antonio (Bôa Vista), lower Tocantins, ♂ ad., Jan. 27, 1926.

A very worn specimen, with a few fresh feathers just emerging from the sheaths here and there, extends the recorded range from the lower Amazon to northern Goyaz, though Madame Snethlage had already listed the same form from Arumatheua, lower down on the Tocantins.

I am still in doubt whether the representatives of this Paroquet found along the banks of the Rio Madeira are really separable from *P. p. amazonum*, as has been intimated by Madame Snethlage.¹ Regardless of locality there is much variation in size as well as in the intensity and shape of the dusky markings on the anterior under parts.

[396. *Pyrrhura perlata*² *lepida* (Wagler).

Sittace lepida Wagler, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 1, p. 642, 1832—"Brasilia versus flumen Amazonum."

Pyrrhura perlata lepida Neumann, Verh. Orn. Ges. Bay., 17, p. 429, 1927—Guimarães, Maranhão.

Neumann refers a single female, obtained on November 14, 1902 at Guimarães and preserved in the Senckenbergian Museum at Frankfort, to *P. p. lepida* whose range would seem to extend from the vicinity of Belém east to the Bay of Cuman in northern Maranhão.]

[397. *Pyrrhura perlata coerulescens* Neumann.

Pyrrhura perlata coerulescens Neumann, Orn. Monatsber., 35, p. 89, 1927—Miritiba, Maranhão; idem, Verh. Orn. Ges. Bay., 17, p. 430, 1927—Miritiba.

¹Bol. Mus. Goeldi, 8, p. 499, 1914.

²Prof. Neumann (Verh. Orn. Ges. Bay., 17, pp. 428-431, 1927), in his recent review, has proposed to split *P. perlata* into four races; and after examining twenty-five skins of this group, including Spix's types, I am bound to concur with his conclusions. I must, however, demur to the statement that the male type of *Aratinga perlata* Spix is no longer in existence. While admitting that Spix's characterization of the male, in certain respects, does not too well agree with the example marked as "male" in the Munich Collection, the author—as he did in other cases—apparently drew up the description not from the actual specimen, but rather from the plate on which the reddish frontal edge, not mentioned in the diagnosis, is indeed lacking. On the other hand, the yellowish green genal patch, the bluish "barba maxillaris," and the coloration of the tail ("apice subcaerulescens") exactly fit the "male" bird in the Munich Museum. The dark green prepectoral feathers, shown by the "male" type, had been glued on, as pointed out by Wagler (l. c., p. 643): "Jugulo speciminis ab eo falso mare speciei sequentis descripto plumae virescentifuscae avis alienae erant." They have since been removed, and the breast consequently exhibits a bare spot in the middle. Moreover, Spix expressly states that he secured but two specimens. These were listed as early as 1860 in Siebold's handwritten Catalogue, and there is no reason to suppose that there were ever more than two Spixian specimens of this Paroquet in the Munich Collection.

Wagler's description of *S. lepida* was evidently taken from the Berlin Museum example, and when referring Spix's female to *S. chlorogenys*, he probably did so without having his own type (of *S. lepida*) for direct comparison.

The tails in Spix's types are by no means worn, as erroneously stated in my review; they are, on the contrary, in the process of molting and about half-grown. In both specimens, the wings are clipped.

They differ from both *P. p. lepida* (Pará region) and *P. p. coerulescens* (Miritiba) by entirely pyrite yellow genal patch; a very distinct kaiser brown frontal edge; and exceedingly pale (dingy light pinkish buff) foreneck and chest with narrow, dusky, apical edges. Whether they represent a constant form or merely a cage-variety remains to be established by future researches.

Pyrrhura perlata (not *Aratinga perlata* Spix) Reiser, pp. 100, 120—Miritiba.

Maranhão: Miritiba, five ♂♂ ad., four ♀♀ ad., May 6, Sept. 15, 19, Oct. 2, Dec. 12, 1907. F. Schwanda (Munich and Tring Museum).

Compared with ten specimens from the Pará region (Santa Antonio do Prata, Benevides, Igarapé-assú, Peixe-Boi), this series differs by its much larger and bicolored (yellowish green or light green anteriorly, decidedly bluish posteriorly) genal patch, and more bluish foreneck and chest, with narrower and paler (dingy whitish or dull buffy brownish instead of ochreous brown) apical edges. Judging from the material on hand, this appears to be a valid race, although it affords the only instance of an Amazonian species being represented by two geographic forms in the western and eastern sections of the forest region of northern Maranhão.

P. p. coerulescens is known only from the type locality.¹

398. **Forpus² passerinus flavissimus** subsp. nov.

Psittacula passerina (not *Psittacus passerinus* Linnaeus) Reiser (1), p. 57, 1910—part, No. 1284, Queimadas, Rio Parnahyba, Piahy.

Psittacula passerina vivida (not of Ridgway) Reiser (2), p. 120, 1925—Rio Parnahyba, Piahy.

Maranhão: Tury-assú, ♂ ad., Nov. 30, 1923; São Bento, ♂ ad., ♀ ad., Sept. 8, 1923; Grajahú, ♀ ad., Oct. 28, 1924; Codó, Cocos, three ♂♂ ad., two ♀♀ ad., June 18, 1924.

Piahy: Ibiapaba, three ♂♂ ad., Jan. 6, 16, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, six ♂♂ ad., ♀ ad., July 30, Aug. 10, 14, 28, Sept. 2, 1913. R. H. Becker.

Type from Tury-assú, Maranhão, Brazil in Field Museum of Natural History. No. 62909. Adult male. November 30, 1923. H. Snethlage.

Characters.—Most nearly related to *F. passerinus vividus* (Ridgw.), from Bahia and southward, but green of upper parts decidedly lighter and more yellowish; forehead, cheeks, and upper throat suf-

¹Miranda Ribeiro (Rev. Mus. Paul., 12, (2), p. 34, 1920), obviously by mistake, includes Maranhão in the range of *Pyrrhura rhodogaster* (Sclater). This fine species, probably a western representative of the *P. perlata* group, is known only from certain southerly tributaries of the Amazon (Jamauchim; Rio Madeira; Rio Jaurú, Matto Grosso).

²For the change of the generic name *Psittacula* to *Forpus* Boie (Journ. Orn., 6, p. 363, 1858), see Mathews, Birds Australia, 6, p. 169, 1917. As Boie did not specify any genotype, we formally designate as such *Psittacus passerinus* Linnaeus, one of the original species.

fused with lemon yellow or wholly yellow; blue of rump and wings lighter, cobalt rather than smalt blue; under parts more yellowish green.

♂ ad.—Wing 81-86; tail 39-44; bill (from frontal edge of cere to tip) 12-14.

♀ ad.—Wing 78-84; tail 38-44; bill 12-14.

Range.—Northeastern Brazil, in states of Maranhão, Piauí, and Ceará.

This is the form to which Mr. Ridgway¹ had once restricted Linnaeus's term *passerinus*,² and which he afterwards³ united with the Bolivian *P. p. flavescens* Salvadori. Comparison with a fine series of sixteen examples from Bolivia, kindly lent by Mr. W. E. Clyde Todd, of the Carnegie Museum, Pittsburgh, however, shows the Brazilian birds to be separable by the decidedly deeper, cobalt rather than spectrum blue tone of the rump and wing-area in the male sex and by the greater extent of yellow on forehead and cheeks.

The characters of this form appear to be most highly developed in birds from the coast of Maranhão, and none of the other examples approaches the type which has the whole forehead as far back as the eye as well as lores, cheeks, and upper throat bright lemon chrome, abruptly defined from the light green of the crown. In the male from São Bento and others from Ceará and Cocos (Codó), the forehead and cheeks are distinctly lemon yellow, though less extensively than in the type; while those from Ibiapaba (Piauí) and one from Cocos have hardly more yellow than certain specimens of *F. p. vividus* from Bahia. However, their general coloration is lighter, more yellowish green, and the blue portions of the male plumage are not so dark.

The range of this yellowish northern form is not likely to extend east much beyond Ceará, since an adult male from Maceió, Alagoas, in the Museum of Comparative Zoology, Cambridge, clearly belongs with *P. p. vivida*. Its occurrence near Pará, as recorded by Ridgway, requires confirmation by authentic specimens.

¹Proc. U. S. Nat. Mus., 10, p. 538, Aug., 1888.

²As shown by Berlepsch (Nov. Zool., 15, p. 285, 1908), *Psittacus passerinus* Linnaeus (Syst. Nat., 10th ed., 1, p. 103, 1758; Mus. Ad. Frid., 2, Prodr., p. 16, 1764—hab. ign.) clearly refers, however, to the green-rumped bird afterwards described as *Agapornis guianensis* Swainson (Anim. Menag., p. 320, Dec., 1837—Demerara, British Guiana.)

³Bull. U. S. Nat. Mus., 50, Part 7, p. 189, 1916.

There can be little doubt that all the Passerine Parrots of eastern South America are merely races of a single specific unit, the Lower-Amazonian *F. deliciosus* being just intermediate between the green-rumped group (*passerinus*, *viridissimus*, *cyanophanes*) and the blue-rumped group (*crassirostris*, *flavescens*, *flavissimus*, *vividus*).

399. *Brotogeris tuipara* (Gmelin).

Psittacus tuipara Gmelin, Syst. Nat., 1, (1), p. 348, 1788—based on (Brisson ex) Marcgrave's "Tuipara," Hist. Nat. Bras., p. 206, northeastern Brazil.

"*Brotogerys notata* Sl. (= *tuipara* Gm.)" (sic) Reiser (1), p. 100, 1910—Maranhão.

Brotogerys tuipara Reiser (2), p. 121, 1925—Miritiba, Maranhão.

Maranhão: Rosario, four ♂♂ ad., April 24, May 5, 1924.

Besides, I have examined eight specimens from Miritiba, secured by F. Schwanda, in the collections at Vienna and Munich.

The series agrees with another from the Pará region.

This Paroquet, apparently a representative of *B. chrysopterus* (Linnaeus), of the Guianas and the north bank of the lower Amazon, replaces it south of that river,¹ ranging from the Tapajóz to Pará and through the forested coast belt at least to northeastern Maranhão. Farther west, on the Rio Madeira, another allied form, *B. chrysosema* Sclater, is found.

400. *Brotogeris chiriri* (Vieillot).

Psittacus chiriri Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 25, p. 359, 1817—based on Azara, No. 283, Paraguay.

"*Brotogerys xanthoptera* (Spix) = *chiriri* (Vieill.?)" (sic) Reiser (2), p. 120, 1925—Riacho Fresco, Piahy.

Maranhão: Tury-assú, ♀ ad., Dec. 4, 1923; Grajahú, two ♀♀ ad., Oct. 17, 1924; Barra do Corda, ♀ ad., Aug. 16, 1924; Codó, Cocos, two ♂♂ ad., June 29, July 4, 1924.

Goyaz: Philadelphia, ♀ ad., Dec. 16, 1925.

In addition, I have seen several examples, taken by F. Schwanda at Miritiba, Maranhão, in the collection of the Munich Museum.

The series agrees perfectly with specimens from Bahia (São Marcello, Rio Preto), Minas Geraes (near Lagôa Santa), and Matto Grosso.

¹Snethlage's record from "Monte Alegre" (in Bol. Mus. Goeldi, 8, p. 139, 1914) is obviously inaccurate.

This species, widely distributed in the interior of Brazil, Bolivia, Paraguay, and northern Argentina, reaches the northern limit of its range in the state of Maranhão. Even the bird from Tury-assú fails to show the slightest approach to *B. virescens* (Gmelin), with which we already meet at Pará, whence it extends all through the Amazon Valley to northeastern Peru.¹

401. *Amazona amazonica amazonica* (Linnaeus).

Psittacus amazonicus Linnaeus, Syst. Nat., 12th ed., 1, p. 147, 1766—based on Brisson, Frisch, etc.; Amazon River (ex Brisson) accepted as type locality.²

Chrysotis amazonica Reiser (1), p. 56, 1910—Santa Philomena, Piauhý.

Amazona (Chrysotis) amazonica Reiser (2), p. 109, 1925—Rio Parnahyba, Piauhý.

Maranhão: Mangunça Island, ♂ ad., ♀ ad., Feb. 25, 1924.

Widely diffused in South America east of the Andes, south to Matto Grosso and Paraná.³

[402. *Amazona aestiva aestiva* (Linnaeus).

Psittacus aestivus Linnaeus, Syst. Nat., 10th ed., 1, p. 101, 1758—"America"; southern Brazil accepted as type locality.⁴

Chrysotis aestiva Reiser (1), p. 56, 1910—Parnaguá and Santa Maria, Piauhý.

Amazona (Chrysotis) aestiva Reiser (2), p. 110, 1925—Chapada da Varzea Grande, foot of Serra de Santa Philomena, and Rio Parnahyba, Piauhý.

The range of this Parrot, which was collected at various localities by members of the Vienna Academy Expedition, comprises eastern Brazil, from Piauhý and Pernambuco south to Rio Grande do Sul. In Bolivia, northern Argentina, and Paraguay it is replaced by *A. aestiva xanthopteryx* (Berlepsch),⁵ of which I have examined a large series.]

[403. *Amazona xanthops* (Spix).

Psittacus xanthops Spix, Av. Bras., 1, p. 39, pl. 26, 1824—interior of Minas Geraes (type in Munich Museum examined).

¹See Hellmayr, Abhandl. Bayr. Ak. Wiss., Math.-phys. Kl., 26, No. 2, pp. 137-138, 1912.

²See Hellmayr, Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 594, 1906.

³*Amazona amazonica tobagensis* Cory (Field Mus. Nat. Hist. Pub., Zool. Ser., 13, Part 2, No. 1, p. 83, 1918—Tobago) differs only by reason of rather larger size and slightly paler coloration.

⁴See Hellmayr, Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 593, 1906.

⁵*Chrysotis aestiva xanthopteryx* Berlepsch, Orn. Monatsber., 4, p. 173, 1896—Bueyes, eastern Bolivia.

Chrysotis xanthops Reiser (1), p. 56, 1910—Parnaguá, Piauhý.

Amazona (Chrysotis) xanthops Reiser (2), p. 111, 1925—Parnaguá.

Piauhý: Parnaguá, three ♂♂, two ♀♀, May, 1903. O. Reiser (Vienna Museum).

The Vienna Academy Expedition found the Yellow-faced Parrot in great numbers in the neighborhood of Parnaguá, in southern Piauhý. This locality marks the northern limit of its recorded range, which extends over the table-land of Brazil south to northern São Paulo (Itapurá) and west to Matto Grosso. Field Museum has specimens secured by R. H. Becker at São Marcello, Rio Preto, Bahia.]

404. ***Pionus menstruus menstruus* (Linnaeus).**

Psittacus menstruus Linnaeus, Syst. Nat., 12th ed., 1, p. 148, 1766—based on Edwards (hab. ign.) and Brisson: "Guiane" = Cayenne.

Maranhão: Tury-assú, ♀ ad., Oct. 12, 1923.

A species of wide distribution in eastern South America, very common in Amazonia and also found in eastern Brazil.¹

[405. ***Pionus maximiliani maximiliani* (Kuhl).**

Psittacus maximiliani Kuhl, Consp. Psitt., p. 72, 1820—Brazil.²

Psittacus flavirostris Spix, Av. Bras., 1, p. 42, pl. 31, fig. 2, 1824—Piauhý (type in Munich Museum examined).

Pionus maximiliani Reiser (1), p. 56, 1910—Timbó, near Parnaguá, Piauhý; idem (2), p. 111, 1925—Riacho Fresco, Timbó and Burity, Piauhý.

Piauhý: Timbó, near Parnaguá, ♀ ad., June 9, 1903. O. Reiser (Vienna Museum).

This specimen agrees with others from Bahia and Rio de Janeiro, while birds from São Paulo and Rio Grande do Sul are somewhat larger. The range of *P. m. maximiliani* can hardly be defined at present, as much uncertainty exists with respect to the distinctness of the supposed western races (*siy* Souancé; *bridgesi* Boucard; *lacerus* Heine).³]

406. ***Pionus fuscus* (Müller).**

Psittacus fuscus P. L. S. Müller, Natursyst., Suppl., p. 78, 1776—based on Edwards, Glean. Nat. Hist., 3, pl. 315, and Daubenton, Pl. Enl. 408, Cayenne.

Maranhão: Tury-assú, Alto de Alegria, ♀ ad., Nov. 7, 1923.

¹See Wied, Beitr. Naturg. Bras., 4, p. 237, 1832.

²We learn from Wied (Beitr. Naturg. Bras., 4, p. 246, 1832) that the species was sent to Kuhl for description, and venture to suggest as type locality Vigosa, on the Rio Peruhype, south of Caravellas, Bahia.

³See Wetmore, Bull. U. S. Nat. Mus., 133, p. 192, 1926.

A species of Guiana and Lower Amazonia, whose range extends east into the forested section of northern Maranhão.¹

[407. *Sarcoramphus*² *papa* (Linnaeus).

Vultur papa Linnaeus, Syst. Nat., 10th ed., 1, p. 86, 1758—based on Edwards and Albin: "in India occidentali"; hab. subst. Surinam, auct. Berlepsch 1908.

Cathartes papa Reiser (1), p. 88, 1910—Barra do Museo, Rio Parnahyba, Piahy.

Gypagys papa Reiser (2), p. 197, 1925—Piahy.

The King Vulture was observed by Reiser and his companions at several localities in Piahy.]

[408. *Coragyps*³ *urubu foetens* (Lichtenstein).

Cathartes foetens Lichtenstein, Verz. Ausgest. Säug. und Vögel, p. 30, 1818—based on Azara's "Iribu," Paraguay.

Catharista atrata Reiser (2), p. 198, 1925—Parnaguá and Rio Parnahyba, Piahy.

Recorded by Reiser from Piahy.]

[409. *Cathartes*⁴ *aura ruficollis* Spix.

Carthartes ruficollis Spix, Av. Bras., 1, p. 2, 1824—interior of Bahia and Piahy (type lost).

No specimen from northeastern Brazil is available. I have, however, examined an adult male from Joazeiro, Bahia, which agrees perfectly with Spix's description, showing that his *C. ruficollis* belongs to the red-headed species.

See also Bull. U. S. Nat. Mus., 133, pp. 86-91, 1926, where an excellent review of the various species and races is given by A. Wetmore.]

410. *Polyborus plancus brasiliensis* (Gmelin).

Falco brasiliensis Gmelin, Syst. Nat., 1, (1), p. 262, 1788—based on (Brisson ex) Marcgrave's "Caracara," Hist. Nat. Bras., p. 211, northeastern Brazil; hab. subst. Pernambuco.⁵

¹*Derophtys accipitrinus fuscifrons* Hellmayr, found on the south bank of the lower Amazon from the Tapajóz to Pará, probably ranges into Maranhão. In fact, the British Museum has a specimen said to have been sent from this state by R. Wendeborn.

²*Sarcoramphus* Duméril, Zool. Anal., p. 32, 1806—type by subs. desig. (Vigors, Zool. Journ., 2, p. 381, 1825) *Vultur papa* Linnaeus.

³*Coragyps* Geoffroy Saint-Hilaire in Le Maout, Hist. Nat. Ois., p. 66, 1853—type by monotypy *Vultur urubu* Vieillot.

⁴*Cathartes* Illiger, type by subs. desig. (Vigors, 1825) *Vultur aura* Linnaeus.

⁵See Wetmore, Bull. U. S. Nat. Mus., 133, p. 97, 1926, note 79.

Polyborus tharus (not of Molina) Reiser, pp. 88, 199—Parnaguá, Piauhý.

Piauhý: Ibiapaba, ♀ imm., Dec. 28, 1924.—Wing 380.

The northern form of the Caracara ranges from northern Paraguay throughout Brazil as far north as the Amazon and the island of Marajó.

411. **Milvago chimachima chimachima** (Vieillot).

Polyborus chimachima Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 5, p. 259, 1816—based on Azara, No. 6, Paraguay.

Milvago chimachima Reiser, pp. 88, 200—Parnaguá and coast of Piauhý.

Maranhão: Barra do Corda, ♀ juv., Sept. 10, 1924; Fazenda Inhuma, Alto Parnahyba, ♀ ad., July 22, 1925; Tranqueira, two ♂♂ ad., Aug. 31, Sept. 5, 1925.

Additional specimen.—Piauhý: Delta of the Rio Parnahyba, ♂ ad., Sept. 17, 1903. O. Reiser (Vienna Museum).

I am quite unable to distinguish these birds from a series taken in Paraguay, northern Argentina, and eastern Brazil (São Paulo, Bahia). The adults sent by Dr. Snethlage are in perfectly fresh condition and have the under parts as deeply buff as others from more southern localities, while the male from Piauhý, in worn bleached plumage, is almost white underneath, suggesting that this difference, which induced T. E. Penard¹ to revive *Gymnops strigilatus* Spix² as a valid form, is seasonal rather than geographical.

412. **Ibycter ater** (Vieillot).

Daptrius ater Vieillot, Analyse Nouv. Orn. Élé., p. 68, 1816—"le Brésil."

Maranhão: Tury-assú, ♀ ad., Dec. 14, 1923.

An Amazonian species ranging, like so many others, into the forest belt of northern Maranhão.

413. **Ibycter americanus americanus** (Boddaert).

Falco americanus Boddaert, Tabl. Pl. Enl. p. 25, 1783—based on "Le petit Aigle, d'Amérique" Daubenton, Pl. Enl. 417, Cayenne.

Gymnops aquilinus Spix, Av. Bras., 1, p. 11, 1824—Piauhý.

Ibiceter (sic) *americanus* Reiser (1), p. 88, 1910—Santa Philomena, Piauhý and junction of Barroca do Maranhão, Rio Parnahyba, Maranhão.

Ibicter americanus Reiser (2), p. 199, 1925—Rio Parnahyba.

¹Proc. New Engl. Zool. Cl., 8, p. 36, 1923.

²Av. Bras., 1, p. 10, pl. 4a, 1824—Rio Xingú, Brazil.

Maranhão: Grajahú, ♀ ad., Oct. 8, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 18, 1925.

These specimens are absolutely identical with others from British Guiana, Venezuela, and Pará, the wing measurement of the male (345 mm.) being about the same as in three from the Demerara River (330 to 345 mm.). The female is a little larger, having a wing of 365 mm.

H. Kirke Swann,¹ following Pelzeln, proposes to separate, on account of larger size, a southeast Brazilian race, but he is quite wrong in applying to it Latham's name *formosus*. If really distinguishable, which I have no means of ascertaining, the southern birds will have to be rebaptized, since *Falco formosus* Latham² is merely a new name for *Falco aquilinus* Gmelin,³ based on Buffon's and Daubenton's "Petit Aigle, d'Amérique," from Cayenne, hence a pure synonym of *Falco americanus* Boddaert. The range of this doubtfully separable form must be restricted to southern Brazil. Birds from Maranhão, which Swann refers to his *I. a. formosus*, are, as shown above, not distinguishable from typical *americanus*.

[414. *Herpetotheres cachinnans queribundus* Bangs and Penard.

Herpetotheres cachinnans queribundus Bangs and Penard, Bull. Mus. Comp. Zool., 63, p. 23, 1919—Pernambuco, Brazil.

Herpetotheres cachinnans (not *Falco cachinnans* Linnaeus) Reiser, pp. 89, 201—Lake Parnaguá, Serra da Prata, Bôa Vista, near Brejão, and Remanso de Coco, Rio Parnahyba, Piahy.

Recorded by Reiser from various localities in Piahy.

This pale form of the Laughing Falcon ranges all over Brazil from the Amazon south to Paraguay and northern Argentina.]

[415. *Micrastur semitorquatus semitorquatus* (Vieillot).

Sparvius semitorquatus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 10, p. 322, 1817—based on Azara, No. 29, Paraguay.⁴

Micrastur melanoleucus Reiser (2), p. 202, 1925—Miritiba, Maranhão.

As recorded by Reiser (l. c.), the late F. Schwanda secured an adult female near Miritiba, Maranhão, on Feb. 4, 1909, which is now preserved in the Vienna Museum.]

¹Monogr. Birds Prey, Part 2, p. 78, 1925.

²Ind. Orn., 1, p. 38, 1790.

³Syst. Nat., 1, (1), p. 280, 1788.

⁴See Wetmore, Bull. U. S. Nat. Mus., 133, p. 99, 1926.

[416. *Micrastur ruficollis ruficollis* (Vieillot).

Sparvius ruficollis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 10, p. 322, 1817—"l'Amérique méridionale" (the type examined in the Paris Museum is marked "Brésil").

Micrastur ruficollis Reiser, pp. 89, 202—Lagôa Missão, near Parnaguá, Piahy.

A single female, obtained by the Vienna Academy Expedition at the Lagôa Missão, near Parnaguá, in southern Piahy, constitutes the most northerly record of the rufous-necked Harrier-hawk, whose range extends throughout eastern and central Brazil south to Paraguay and northern Argentina. Farther north and west, in Amazonia and Guiana it is replaced by *M. r. gilvicollis* (Vieillot), with which it intergrades in the Pará region, where, along with typical examples of *gilvicollis*, certain individuals with a slight rufescent wash on the foreneck and inner secondaries are found.¹

417. *Cerchneis sparveria australis* (Ridgway).

Tinnunculus sparverius var. *australis* Ridgway, Proc. Ac. Nat. Sci. Phila. for Dec., 1870, p. 149, 1871—new name for *Falco gracilis* (not of Lesson) Swainson, Anim. Menag., p. 281, Dec., 1837, "in the province of Bahia."

Cerchneis sparveria australis Reiser (2), p. 207, 1925—Burity, near Parnaguá and Santo Antonio de Gilboez, Piahy.

Maranhão: Fazenda Inhuma, Alto Parnahyba, ♂ ad., July 27, 1925.

Goyaz: Philadelphia, lower Tocantins, two ♂♂ ad., Nov. 24, Dec. 19, 1925.

The specimens are perfectly identical with others from Bahia (São Marcello, Rio Preto) and Matto Grosso. Only one of the Philadelphia birds has a distinct rufous patch on the crown.

In view of the great individual variation in this form, I strongly doubt the distinctness of *C. s. cearae* Cory,² although the type (and only known specimen) is decidedly paler above, with an unusual amount of rufous on the crown, and less spotted below than any other example seen by me.

¹*Micrastur jugularis* Gurney (List Diurn. Birds of Prey, p. 118, 1884) has no taxonomic standing. It was based partly on specimens (in the plumbeous phase) of *M. ruficollis*, partly on atypical individuals of *M. r. zonothorax* and *M. r. interstes*. H. Kirke Swann (Monogr. Birds Prey, Part 3, p. 152, 1925) is quite confused about it, and obviously did not understand the various plumages of these Hawks. Mr. W. L. Sclater, on the other hand, has presented (Ibis, 1918, pp. 343-347) an admirable treatise of the genus, and I fully agree with his arrangement. See also my remarks in Nov. Zool., 28, pp. 179-180, 1921.

²Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 318, note*, 1915—Quixada, Ceará.

C. s. australis ranges over the greater part of the Brazilian tableland. In Argentina and neighboring countries it completely intergrades with *C. s. cinnamomina* (Sws.).

[418. *Falco fusco-caerulescens fusco-caerulescens* Vieillot.

Falco fusco-caerulescens Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 11, p. 90, 1817—based on Azara, No. 40, Paraguay; Reiser, pp. 91, 207—Burity, near Parnaguá, and below Nova Villa, Rio Parnahyba, Piauhý.

This wide-ranging species was recorded by Reiser from near Parnaguá and the lower Parnahyba.]

419. *Falco rufigularis rufigularis* Daudin.

Falco rufigularis Daudin, Traité d'Orn., 2, p. 131, 1800—based on Latham, Cayenne.

Falco albigularis (not of Daudin?)¹ Reiser, pp. 91, 208—Riacho Fresco, Pedrinha, and Piranha, Lake Parnaguá, Piauhý.

Piauhý: Ibiapaba, ♀ ad., Dec. 15, 1924.

Goyaz: Philadelphia, lower Tocantins, ♂ ad., Nov. 28, 1925.

Not different from Guianan examples. We are unable to discriminate any geographic races of this little Falcon, excepting the Bolivian *F. r. pax* Chubb,² which seems to be separable.

[420. *Falco deiroleucus* Temminck.

Falco deiroleucus Temminck, Nouv. Rec. Pl. Col., livr. 59, pl. 348, 1825—"dans l'île Saint-François, partie méridionale du Brésil"—São Francisco Island, Santa Catharina (type in Paris Museum examined); Reiser (1), p. 91 1910—Burity, near Parnaguá, Piauhý.

Falco aurantius (not of Gmelin)³ Reiser (2), p. 208, 1925—Burity, Piauhý.

Piauhý: Burity, near Parnaguá, ♀ ad., June 17, 1903. P. Wachsmund (Vienna Museum).

This beautiful Falcon, a close ally of *Falco peregrinus*, is widely distributed in Central and South America, but nowhere common.]

421. *Rostrhamus sociabilis sociabilis* (Vieillot).

Herpetotheres sociabilis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 18, p. 318, 1817—based on Azara, No. 16, Corrientes and La Plata River.

Rostrhamus leucopygus Reiser, pp. 90, 206—Illa do Mai and Parnaguá, Piauhý.

¹*Falco albigularis* Daudin seems of doubtful applicability. See also Berlepsch and Hartert, Nov. Zool., 9, p. 115, 1902.

²*Falco albigularis pax* Chubb, Bull. Brit. Orn. Cl., 39, p. 22, 1918—Charuplaya, Bolivia.

³I am unable to recognize the above species in *Falco aurantius* Gmelin (Syst. Nat., 1, (1), p. 283, 1788—based on Latham, Gen. Syn. Birds, 1, p. 105, No. 91, Surinam) and prefer Temminck's later designation, accompanied by an unmistakable description.

Maranhão: São Bento, juv., Aug. 27, 1923.

The Everglade Kite is widely dispersed in South America, ranging as far south as Uruguay and northern Argentina.¹

[422. *Chondrohierax*² *uncinatus* (Temminck).]

Falco uncinatus Temminck, Nouv. Rec. Pl. Col., livr. 18, pls. 103, 104 (adults), 115 (juv.), 1822—"depuis les environs de Rio-Janeiro jusque vers le nord du Brésil, et dans toute la Guiane."

Leptodon uncinatus Reiser, pp. 100, 206—Miritiba, Maranhão.

The late F. Schwanda forwarded to the Vienna Museum an adult male and a female, both taken at Miritiba, Maranhão on Dec. 27, 1907, and April 13, 1909, respectively.

Widely distributed in Central and South America.]

[423. *Odontriorchis*³ *palliatus* *palliatus* (Temminck).]

Falco palliatus (Wied MS.) Temminck, Nouv. Rec. Pl. Col., livr. 23, pl. 204, 1823—"Brésil et Guiane"; we accept Rio Peruhype, near Viçosa, southern Bahia (ex Wied) as type locality.⁴

Leptodon cayennensis Reiser, pp. 90, 206—Pedrinha, Burity, and Santa Philomena, Piahy.

Piahy: Burity, near Parnaguá, ♂ ad., June 14, 1903. O. Reiser (Vienna Museum).

This specimen as well as another from the Rio Acará in the Pará region are indistinguishable from birds taken in São Paulo, which induces me to believe that *O. forbesi* Swann,⁵ based on a single example from Pernambuco, is not a valid form.

¹I take this opportunity of recording an additional specimen of the rare *Helicolestes hamatus* (Temm.) in collection of Field Museum. It is an adult male in perfect plumage and was secured by the late M. P. Anderson on October 11, 1913, at Lagunas, lower Huallaga, Peru. *Rostrhamus taeniurus* Cabanis (Journ. Orn., 2, p. LXXX, 1854—Pará) is the immature stage, the type in the Berlin Museum agreeing exactly with the description as given by Bangs and Penard (Bull. Mus. Comp. Zool., 62, p. 38, 1918).

²*Chondrohierax* Lesson (Echo du Monde Savant, 10, No. 3, p. 61, Jan., 1843—type by monotypy *Daedalion erythrofrons* Lesson = *Falco uncinatus* Temminck) has priority over *Regzrhinus* Kaup 1845.

³*Odontriorchis* Kaup 1844 replaces *Leptodon* Sundevall 1836, the latter name being preoccupied by *Leptodon* Rafinesque 1820 (see Richmond, Proc. U. S. Nat. Mus., 35, p. 621, note b, 1908).

⁴Swann's suggestion, "Matto Grosso" (Syn. Accip., 2nd ed., p. 158, 1922), is untenable. We know from Wied's own statement (Beitr. Naturg. Bras., 3, (1), p. 152, 1830) that the only specimen he obtained during his travels was forwarded to Temminck who figured it in the "Planches coloriées," and, furthermore, we learn from Schlegel (Mus. Hist. Nat. Pays-Bas, Pernes, p. 10, No. 7) that it still is preserved in the Leiden Museum.

⁵Syn. Accip., 2nd ed., p. 159, 1922.

O. p. palliatus inhabits the greater part of eastern South America, from southern Brazil north to Trinidad and Venezuela, extending west into northern Colombia, while a very slightly differentiated race takes its place in Central America.]

424. **Gampsonyx swainsonii swainsonii** Vigors.

Gampsonyx swainsonii Vigors, Zool. Journ., 2, p. 69, 1825—ten miles w. s. w. of Bay of San Salvador, Bahia; Reiser, pp. 91, 207—Serra de Santa Philomena, Piahy.

Maranhão: São Francisco, opposite Amarante, Rio Parnahyba, ♂ ad., July 1, 1925.

Additional specimen.—Ceará: Juá, near Iguatú, ♀ ad., Aug. 28, 1903. R. H. Becker.

Similar to Bahia skins. I am extremely doubtful whether any of the recently proposed races can be maintained, there being much individual variation, both in size and coloration. It appears, however, that in birds from north of the Amazon the rufous of the flanks is generally more intense, and encroaches on the sides of the breast, while those from west of the Andes and Central America are somewhat larger. All of these are at best average characters, and much more comprehensive material than is at present available will be required to define any possible local races and their ranges.

425. **Harpagus bidentatus bidentatus** (Latham).

Falco bidentatus Latham, Ind. Orn., 1, p. 38, 1790—Cayenne.

Maranhão: Tury-assú, ♀ ad., Nov. 12, 1923.

This specimen is in the stage with plain rufous under parts and only a few whitish bars on the lower abdomen. It extends the range of the species from Amazonia to northern Maranhão.

426. **Ictinia plumbea** (Gmelin).

Falco plumbeus Gmelin, Syst. Nat., 1, (1), p. 283, 1788—based on Latham, Cayenne; Spix, Av. Bras., 1, p. 12, 1824—Piahy.

Maranhão: Tranqueira, adult (unsexed), Sept. 5, 1925.

The Plumbeous Kite has a wide distribution in Central and South America.

427. **Geranospiza caerulescens gracilis** (Temminck).

Falco gracilis Temminck, Nouv. Rec. Pl. Col., livr. 16, pl. 91, 1821—"les parties orientales du Brésil."

Geranospizias gracilis Reiser, pp. 89, 202—Parnaguá, Piahy.

Piauhy: Parnaguá, ♂ ad., June 4, 1903. P. Wachsmund (Field Museum).

Besides, I have examined in the Munich Museum an adult female secured by the late F. Schwanda at Miritiba, Maranhão, and in the Berlepsch Collection an unsexed adult from an unspecified locality in Ceará. They agree with others from Bahia (Lamarão), Matto Grosso (Cuyabá, Barra do Jaurú), and Corrientes.

In another connection¹ I have discussed its range, which extends from Maranhão and Piauhy² south throughout Brazil to eastern Bolivia, Paraguay, and northern Argentina. North of the Amazon it is represented by *G. c. caerulea*, while other allied races are found in western Ecuador and Central America.

428. *Accipiter pileatus* (Temminck).

Falco pileatus (Wied MS.) Temminck, Nouv. Rec. Pl. Col., livr. 35, pl. 205, 1823—"on doit la connaissance de cette espèce au prince de Neuwied qui l'a rapportée de ces voyages au Brésil," = Ilha Cachoeirinha, Rio Belmonte, Bahia.³

Accipiter pileatus Reiser, pp. 89, 202—Os Umbús and Parnaguá, Piauhy.

Maranhão: Tranqueira, ♂ ad., Sept. 13, 1925.—Wing 208; tail 165.

Piauhy: Ibiapaba, (♂) juv., Dec. 25, 1924.—Wing 202; tail 170.

The adult male agrees with others from Bahia (Villa Nova) and São Paulo, and the young bird shows the heavy blackish brown markings underneath, characteristic of the juvenile plumage of *A. pileatus*.

This Sparrow Hawk inhabits eastern Brazil, from the interior districts of Maranhão and Piauhy south to Rio Grande do Sul and Matto Grosso, including Paraguay and Corrientes. It appears to be the southern representative of *A. bicolor* (Vieillot), of Guiana, Venezuela, etc., which ranges as far south as Pará, whence there is an adult male, obtained by Prof. J. B. Steere at Bemfica, on July 25, in the Tring Museum. In adult plumage, this form differs from *A. pileatus* in its whitish instead of rufous under wing coverts, while young birds are immediately recognizable by their (unspotted) plain buff under parts. A bird in juvenile plumage, taken by the late Ferdinand Schwanda at Primeira Cruz, coast of Maranhão,

¹Nov. Zool., 28, pp. 177-178, 1921.

²Possibly birds from the island of Marajó, which we have not seen, also belong to this form.

³See Wied, Beitr. Naturg. Bras., 3, (1), p. 111, 1830.

on June 20, 1906 (Museu Paulista, No. 6681), is intermediate between *A. pileatus* and *A. bicolor*, suggesting their intergradation. Whether such is really the case, remains to be proved by additional material from northern Maranhão.

[429. *Accipiter superciliosus superciliosus* (Linnaeus).

Falco superciliosus Linnaeus, Syst. Nat., 12th ed., 1, p. 128, 1766—Surinam (descr. juv.).

Accipiter tinus Reiser, pp. 89, 203—Parnaguá, Piauhý and Miritiba, Maranhão.

Reiser obtained an adult male near Parnaguá, Piauhý, on May 30, 1903, and F. Schwanda forwarded to the Vienna Museum an immature female, taken at Miritiba, Maranhão, on October 6, 1907.

This diminutive Sparrow Hawk is widely diffused in South America, east of the Andes, ranging south to São Paulo, Brazil. In Panama and Colombia (Santa Marta region and Pacific coast) it is replaced by *A. s. fontanieri* Bonaparte.¹

[430. *Heterospizias meridionalis meridionalis* (Latham).

Falco meridionalis Latham, Ind. Orn., 1, p. 36, 1790—Cayenne.

Heterospizias meridionalis Reiser, pp. 90, 204—Lagôa Saco (road from Parnaguá to Santo Antonio de Gilboez) and Santo Antonio de Gilboez, Piauhý.

Recorded by Reiser from various localities in Piauhý. We have no material from this state, but birds from the Rio Preto, Bahia, agree with others from British Guiana, the Rio Branco, etc.

The Red-winged Hawk has a wide distribution in South America, ranging from Panama south to Rio Grande do Sul and neighboring countries. A supposedly larger race has been described from western Argentina.²

[431. *Asturina nitida nitida* (Latham).

Falco nitidus Latham, Ind. Orn., 1, p. 41, 1790—Cayenne.

Asturina nitida Reiser, pp. 90, 203—Pedrinha (Lake Parnaguá), Lagôa do Fundu (road from Parnaguá to Santo Antonio de Gilboez), and below São Miguel, Rio Parnahyba, Piauhý.

¹*Accipiter fontanieri* Bonaparte (Rev. Mag. Zool., (2), 5, p. 578, 1853—locality not stated) has priority over *Accipiter superciliosus exitiosus* Bangs and Penard (Proc. New Engl. Zool. Cl., 7, p. 45, 1920—Santa Marta). The type, which I have recently examined in the Paris Museum, is in the rufous (immature) plumage, and was obtained by Fontanier at Santa Cruz, in the Santa Marta region.

²*Heterospizias meridionalis australis* Swann, Auk, 38, p. 359, 1921—Laguna de Malima, Tucumán; see Wetmore, Bull. U. S. Nat. Mus., 133, p. 114, 1926.

The Vienna Academy Expedition secured several examples of the Shining Buzzard-Hawk, which is generally distributed over tropical South America, from Panama to southern Brazil.]

432. ***Rupornis magnirostris nattereri*** (Sclater and Salvin).

Asturina nattereri Sclater and Salvin, P. Z. S. Lond., 1869, p. 132—vicinity of Bahia, Brazil.

Rupornis nattereri Reiser (1), p. 89, 1910—Illa São Martin, Rio Parnahyba, Piauhv.

Rupornis magnirostris nattereri Reiser (2), p. 203, 1925—Fazenda Enseada (north of Parnaguá) and Illa São Martin, Piauhv.

Falco magnirostris (not of Gmelin) Spix, Av. Bras., 1, p. 18, 1824—Piauhv.

Maranhão: Tury-assú, ♀ ad., Dec. 29, 1923; São Bento, ♂ ad., Sept. 4, 1923.

Piauhv: Ibiapaba, ♀ juv., Jan. 10, 1925.

Additional specimens.—Maranhão: São Luiz, ♂ ad., July 15, 1905 (Sophia Museum); Primeira Cruz, ♂ ad., ♀ ad., Aug. 8, Dec. 18, 1905; Tapera, ♀ ad., Nov. 10, 1905; Miritiba, ♂ ad., three ♀ ♀ ad., ♀ juv., Feb. 15, April 1, 26, Sept. 17, Oct. 4, 1907. F. Schwanda (Munich Museum).—Piauhv: Illa São Martin, Rio Parnahyba, ♀ juv., Aug. 22, 1903. O. Reiser (Vienna Museum).—Ceará: Juá, near Iguatú, two ♂ ♂ ad., July 30, Aug. 2, 1913. R. H. Becker (Field Museum).

Compared with eight specimens from various parts of Bahia, this series is decidedly referable to *nattereri*, though there is an average difference in the coloration of the adults. The throat is generally darker, less streaked with white, and the tawny of the chest slightly duller and more variegated with grayish, while the upper parts are a shade more grayish, thus suggesting a slight approach to the characters of *R. m. magnirostris* which we already find in the Pará region. Certain examples, however, are absolutely indistinguishable from topotypes of *nattereri*.

R. m. nattereri appears to be restricted to northeastern Brazil, ranging from Maranhão and Ceará south to Bahia. In addition to those listed above, specimens have been examined from the following localities in the state of Bahia: City of Bahia (3), Serra de Solidade, near Carnahyba (1), Barra (1), Fazenda da Serra, Rio Grande (1), and Lagôa do Boqueirão, Rio Grande (1).

Farther south, at least as far north as Espirito Santo and Minas Geraes, and extending down to Rio Grande do Sul, Matto Grosso,

and Misiones, it is represented by a considerably larger form, with much darker brown upper parts and mainly dark brown throat. This race, of which not less than forty-one specimens covering its entire range have been examined, is evidently entitled to the name *R. magnirostris magniplumis* (Bertoni),¹ based on a single adult from Mondá-ih, in southeastern Paraguay, close to the Misiones boundary line. An adult female from Santa Ana, Misiones, is almost an exact duplicate of another from Victoria, Espirito Santo. Birds from Rio Grande do Sul form the transition to *R. m. gularis* (Schlegel),² of Uruguay, Entre Rios, and Buenos Aires.³

I expect to discuss the various races of this Hawk on another occasion.

[433. *Busarellus nigricollis nigricollis* (Latham).

Falco nigricollis Latham, Ind. Orn., 1, p. 35, 1790—Cayenne.

Busarellus nigricollis Reiser, pp. 90, 205—Pedrinha, Lake Parnaguá, and Lagôa Missão, Piauí.

The Black-collared Hawk, widely diffused in Central America and northern South America, was recorded by Reiser from southern Piauí. We have no material from this region.]

[434. *Buteogallus aequinoctialis* (Gmelin).

Falco aequinoctialis Gmelin, Syst. Nat., 1, (1), p. 265, 1788—based on Latham, Cayenne.

Buteogallus aequinoctialis Reiser (1), p. 90, 1910—coast of Piauí; idem (2), p. 205, 1925—Igarassú Channel near city of Parnahyba, Ilha Grande, and Amaração, Piauí, and Miritiba, Maranhão.

"*Ibiceter* (sic) spec." Reiser (1), p. 100, 1910—Maranhão (spec. examined).

Maranhão: Miritiba, ♀ juv., Sept. 12, 1907 (Vienna Museum); Boa Vista, ♂ juv., April 2, 1907. F. Schwanda (Museu Paulista).

Reiser found the Equinoctial Buzzard common in the coast region of Piauí. The two specimens from Maranhão, both in juvenile plumage, were likewise taken in the forested coast belt.

¹*Potamolegus superciliaris magniplumis* Bertoni, An. Cient. ¶Parag., 1, p. 159, 1901.

²*Asturina gularis* Schlegel, Mus. Hist. Nat. Pays-Bas, Asturinae, p. 4, 1862—Buenos Aires (type in Leiden Museum examined).

³*Asturina pucherani* J. and E. Verreaux (Rev. Mag. Zool., (2), 7, p. 350, 1855), based on a young bird of unknown locality, can be determined only by reexamination of the type in the Norwich Museum.

This species is restricted to the swampy woods along the Atlantic coast of South America, from the Orinoco delta (Pedernales) south to Parnaguá, in the Brazilian state of Paraná.¹]

[435. **Morphnus² urubitinga urubitinga** (Gmelin).

Falco urubitinga Gmelin, Syst. Nat., 1, (1), p. 265, 1788—based on "Urubitinga" (Brisson ex) Marcgrave, northeastern Brazil.

Urubitinga urubitinga Reiser (1), p. 90, 1910—Pé do Morro and Lagôa do Limoeiro, near Parnaguá, Piauhý.

Urubitinga³ urubitinga Reiser (2), p. 204, 1925—Piauhý.

Recorded by Reiser from various places in Piauhý.

The Brazilian Eagle is generally distributed in South America, from Colombia to Argentina.]

[436. **Leucopternis albicollis** (Latham).

Falco albicollis Latham, Ind. Orn., 1, p. 36, 1790—Cayenne.

Leucopternis albicollis Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 68, 1926—Tury-assú, Maranhão.

A specimen was secured by Madame Snethlage at Tury-assú.

This Hawk is rather widely diffused throughout Guiana, Amazonia, and Trinidad.]

437. **Columba⁴ picazuro** Temminck.

Columba picazuro Temminck, Hist. Nat. Fig. et Gall., 1, pp. 111, 449, 1813—based on Azara, No. 317, Paraguay; Reiser, pp. 86, 188—Parnaguá, Burity, Oro, and Bomfim, above Nova York, Rio Parnahyba, Piauhý.

Piauhý: Ibiapaba, ♂ ad., Jan. 16, 1925 (Conover Coll., No. 3212).

On comparing twenty specimens of this Pigeon from Bolivia (Buenavista), Argentina (Rio Colorado, Tucumán; Santa Ana, Misiones; Los Ingleses, Ajó, Buenos Aires) and Uruguay, I find so much individual variation in intensity of coloration both above and

¹There is no reliable authority for its occurrence either in Colombia or Paraguay, sometimes included in its range.

²*Morphnus* Dumont 1816 (type by subs. design., Gray, 1840, *Falco urubitinga* Gmelin) replaces *Urubitinga* Lafresnaye 1842 (See Opinion 62 of the International Commission on Zoological Nomenclature; Smithsonian. Inst. Pub., No. 2256, p. 147, 1914).

³The generic name is erroneously credited to Gmelin 1788.

⁴I do not see any practical advantage in splitting this genus into a number of more or less poorly defined groups, such as *Picazueros*, *Notioenas*, *Lepidoenas*, *Chloroenas*, etc.

below that the distinction of the proposed southern race *C. p. venturiana* Hartert¹ becomes very questionable.

As far as color is concerned, the Ibiapaba bird, except in having a very slightly paler crown, is exactly duplicated by an adult male from Rio Colorado, Tucumán and another from Buenavista, Bolivia; but it is smaller than any other specimen seen by us.

Pending the receipt of a topotypical series from Paraguay, it may provisionally stand under Temminck's term.

This Pigeon is extensively distributed in the Catinga region of Brazil, having been taken at various localities between Piauí and Parahyba in the north and Matto Grosso and Rio Grande do Sul in the extreme south, and, furthermore, ranges into Uruguay, northern Argentina, and eastern Bolivia.

[438. *Columba speciosa* Gmelin.

Columba speciosa Gmelin, Syst. Nat., 1, (2), p. 783, 1789—based on Buffon and Daubenton, Pl. Enl. 213, Cayenne; Reiser, pp. 100, 188—Miritiba, Maranhão; Snethlage, Bol. Mus. Goeldi, 8, p. 61, 1914—Guimarães, Maranhão.

The late F. Schwanda shot a male at Miritiba, on October 1, 1907, which is now in the collection of the Vienna Museum, and Madame Snethlage records skins from Guimarães, likewise in the coast region.

The Trocál Pigeon is generally distributed throughout Central and South America, ranging as far south as Matto Grosso and Santa Catharina.]

[439. *Columba purpureotincta* Ridgway.

Columba purpureotincta Ridgway, Proc. U. S. Nat. Mus., 10, "1887," p. 594, note, Sept., 1888—Demerara, British Guiana; Snethlage, Bol. Mus. Nac. Rio de Janeiro, 2, No. 6, p. 68, 1926—Tury-assú, Maranhão.

Madame Snethlage records a specimen of this Amazonian Pigeon from Tury-assú, northern Maranhão, which marks the eastern limit of its range.]

440. *Columba rufina sylvestris* Vieillot.

Columba sylvestris Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 26, p. 366, 1818—based on Azara, No. 319, Paraguay.

Columba rufina sylvestris Reiser (2), p. 189, 1925—opposite junction of Barroca do Maranhão, Barra do Galiota, below Queimadas, Rio Parnahyba, Piauí.

¹Nov. Zool., 16, p. 260, 1909—Mocovi, Prov. Santa Fé, Argentina.

Maranhão: Tranqueira, two ♂♂ ad., ♀ imm., Aug. 18, 30, Sept. 5, 1925 (Conover Collection).

These specimens as well as two from the vicinity of Pará agree with a series from Bahia, São Paulo, and Paraguay (Villa Rica), though in the birds from Bahia northwards the tail is possibly not quite so pronouncedly bicolor as in those from more southern localities. The divergency is, however, at best an average character, many northern examples being absolutely indistinguishable from Paraguayan topotypes.

C. rufina sylvestris ranges from northern Argentina, Rio Grande do Sul, and Paraguay north to the south bank of the Amazon.

North of the River and on the islands of Marajó and Mexiana it is replaced by an allied race with nearly uniform grayish brown tail or but a slight suggestion of a darker subterminal band. The late C. B. Cory¹ named it *Columba rufina andersoni* from a single adult male taken by M. P. Anderson on March 8, 1913, in the Serra da Lua, near Boa Vista, on the Rio Branco, but in default of satisfactory material its distinctness from *C. r. rufina*, of Guiana, cannot be considered as established. The few specimens available for comparison² have the abdomen and under tail coverts decidedly darker gray and the subterminal portion of the rectrices more obscured than in *C. r. rufina*, suggesting an approach to the southern *C. r. sylvestris*. A male from Barcellos, Rio Negro, while agreeing in tail-markings, is however, as pale-bellied as Guianan skins, and until a good series of typical *rufina* from French and British Guiana comes to hand, it is impossible to say whether *C. r. andersoni* is a valid race or not.

441. *Zenaida auriculata noronha* Chubb.

Zenaida auriculata noronha Chubb, Ibis, (11), 1, p. 36, 1911—Fernando Noronha Island, off Brazil.

Zenaida auriculata (not *Peristera auriculata* Des Murs) Reiser, pp. 87, 189—Lake Parnaguá, Santo Antonio de Gilboez, Santa Philomena, and Caitetú, Piahy.

Maranhão: Tranqueira, ♂ ad., Aug. 31, 1925.

Piahy: Ibiapaba, five ♂♂ ad., two ♀♀ ad., Dec. 14, 15, 16, 17, 28, 29, 1924; Arára, ♂ ad., ♀ ad., Jan. 31, 1925.

¹Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 294, 1915.

²In addition to the type, I have examined an adult male collected by Natterer at the Forte São Joaquim, Rio Branco, on December 12, 1831 (Vienna Museum); an adult male from São Natal, Marajó, October 28, 1912 (H. Dürck, Munich Museum); and finally an adult male secured on September 19, 1901, by Dr. Haggmann at Nazareth, Mexiana (Museu Goeldi, No. 2278).

This series as well as three adults from Rio do Peixe, near Queimadas, Bahia agree, in size and color, with two topotypes from Fernando Noronha, courteously lent by the authorities of the American Museum of Natural History, New York. Compared with ten skins of typical *auriculata* from central Chile, the Brazilian form is decidedly smaller (wing of males 133 to 137, rarely 141 and 142, against 147-157 mm.), and the anterior under parts are generally of a paler vinaceous pink color. In small size, it approaches *Z. auriculata marajoensis* Berlepsch,¹ from Marajó and Pará, but is less vinaceous below, with the under tail coverts and middle of the lower abdomen light buff or pale ochraceous buff.

The range of *Z. a. noronha* probably comprises the greater part of eastern and inner Brazil, since two adults from Matto Grosso (Cuyabá and Chapada) are apparently inseparable from the Piahy series. No material is available from southern Brazil (Minas Geraes, Rio, São Paulo, Paraná).

442. *Scardafella squammata squammata* (Lesson).

Columba squamosa (not of Bonaterre 1792) Temminck (and Knip), Les Pigeons, 1, Colombes, p. 127, pl. 59, 1810—"dans le territoire de Bahin (sic) au Brésil" = Bahia.

Columba squammata Lesson, Traité d'Orn., p. 474, 1831—based on Temminck, pl. 59.

Scardafella squammata cearae Cory, Field Mus. Nat. Hist. Pub., Zool. Ser., 12, p. 6, 1917—Quixada, Ceará.

Goyaz: Philadelphia, lower Tocantins, ♂ ad., Nov. 25, 1925.

Maranhão: Codó, Cocos, two ♂♂ ad., June 10, 23, 1924; São Francisco, opposite Amarante, Rio Parnahyba, ♀ ad., July 1, 1925.

Piahy: Ibiapaba, four ♂♂ ad., ♀ ad., ♀ juv., Dec. 23, 24, 1924, Jan. 7, 1925; Deserto, ♀ ad., Apr. 14, 1925; Arára, ♂ ad., ♀ ad., Jan. 22, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, two ♂♂ ad., two ♀♀ ad., Aug. 1, 2, 22, 1913; Quixada, six ♂♂ ad., June, 1913. R. H. Becker.

With a very satisfactory series of forty specimens before me, I can positively assert that there is no local variation in this race. Birds from Ceará and adjacent districts are exactly like others from

¹*Zenaida jessiae marajoensis* Berlepsch, Ornith. Monatsber., 21, p. 149, 1913—Hacienda São Andre, island of Marajó (type in Senckenbergian Museum, Frankfurt examined).

Matto Grosso (Piraputanga), São Paulo (Irisanga), and Paraguay (Villa Rica).¹

When describing *S. s. cearae*, the late C. B. Cory was misled by certain examples from Bahia (Macaco Secco, near Andarahy) and Minas Geraes (Rio das Velhas, near Lagôa Santa), in which the under parts are stained by ferruginous soil.

S. s. squammata is peculiar to the table-land of Brazil, ranging from the interior of Maranhão and Piauh, Ceará and Parahyba south to northern São Paulo and Matto Grosso, and extending into Paraguay (Villa Rica).

443. *Columbina*² *picui strepitans* Spix.

Columbina strepitans Spix, Av. Bras., 2, p. 57, pl. 85, fig. 1, 1825—"in campis Piauh" (type in Munich Museum examined).

Columbina (Columbula) strepitans Reiser (1), p. 87, 1910—Pedrinha, Lake Parnaguá, Piauh.

"*Columbina strepitans* Spix = *Columbula picui* (Tem.)" (sic) Reiser (2), p. 191, 1925—near Parnaguá, Piauh.

Piauh: Ibiapaba, two ♂♂ ad., three ♀♀ ad., Dec. 14, 17, 22, 1924, Jan. 10, 1925; Arára, two ♀♀ ad., Jan. 23, 29, 1925.

Ceará: Varzea Formosa, ♀ ad., March 2, 1925.

Additional specimens.—Piauh: Pedrinha, ♂ ad., May 22, 1903. O. Reiser (Vienna Museum); immature (unsexed) from an unspecified locality, type of *C. strepitans* Spix (Munich Museum).—Ceará: Quixada, ♀ ad., June 19, 1913. R. H. Becker.

In the light of this material, *C. p. strepitans* turns out to be a perfectly good race, although two of the characters, claimed by Chubb,³ are seen to be of no consequence. Compared with twenty specimens of typical *picui* from Paraguay (Villa Rica), Argentina (Tapia, Tucumán; Tunuyán, Mendoza; Buenos Aires), the north-Brazilian birds are smaller (wing 86-88, against 90-94) and markedly paler, the back and inner secondaries being light grayish brown instead of drab, and the anterior under parts much less shaded with vinaceous, while the middle of the abdomen is more extensively white. Two from Ibiapaba, Piauh, by their pale vinaceous fawn

¹An adult female, collected on Sept. 20, 1925, by F. Schade, in the collection of H. B. Conover (No. 4099).

²*Columbina* Spix (Av. Bras., 2, p. 57, 1825), type by subs. desig. (Gray, List Gen. Birds, 2nd edit., p. 75, 1841) *Columbina strepitans* Spix.

³Ibis, 1910, p. 62.

throat and breast, approach certain pale-colored examples of typical *picui* which, as a rule, has these parts of a darker shade, between light vinaceous fawn and vinaceous buff. The majority from the north, however, are decidedly paler. One from Ibiapaba, excepting a very faint pale drab grayish hue across the foreneck, is very nearly white underneath, and a female from Varzea Formosa, Ceará shows a delicate tilleul buff tinge on throat and chest.

A Bahia trade skin and two adults from Joazeiro, Bahia, in the Vienna Museum are likewise referable to this pale race, whose range is apparently restricted to northeastern Brazil.

444. *Chamaepelia*¹ *passerina griseola* (Spix).

Columbina griseola Spix, Av. Bras., 2, p. 58, pl. 75a, fig. 2, 1825—"in sylvis fl. Amazonum" (type in Munich Museum examined; = ♀ imm.).

"*Chamaepelia passerina* (L.) (= *griseola* Spix)" (sic) Reiser, pp. 87, 190—Amaração, coast of Piahy.

Maranhão: Tury-assú, ♂ ad., Dec. 7, 1923; São Luiz, ♂ ad., July 31, 1923.

Additional specimen.—Maranhão: São Luiz, ♂ ad., May 17, 1905. F. Schwanda (Sophia Museum).

Identical with specimens from the lower Amazon and Bahia. A series from British Guiana is on average somewhat paler, particularly below.

Spix's Ground Dove inhabits the Guianas, Lower Amazonia west to the Rio Negro and Rio Madeira (Borba), and extends along the coast of eastern Brazil as far south as Bahia.²

445. *Chamaepelia minuta minuta* (Linnaeus).

Columba minuta Linnaeus, Syst. Nat., 12th ed., 1, p. 285, 1766—based on "Turtur parvus fuscus americanus" Brisson, Orn., 1, p. 116, pl. 8, fig. 2, "San Domingo," errore; Cayenne substituted as type locality by Berlepsch and Hartert (Nov. Zool., 9, p. 119, 1902).

Chamaepelia minuta Reiser, pp. 87, 190—lower Parnahyba, Piahy.

Maranhão: Codó, Cocos, ♂ imm., ♀ juv., June 26, 1924; Victoria, Alto Parnahyba, ♀ ad., July 15, 1925; Fazenda Inhuma, Alto Parnahyba, two ♀ ♀ ad., July 25, 1925 (Conover Collection).

¹According to the decision of the International Commission on Zoological Nomenclature (Smithson. Inst. Pub., No. 2256, pp. 145-146, 1914), the original orthography *Chaemepelia* is to be altered to *Chamaepelia*.

²Its reported occurrence in Paraguay and Misiones is doubtless due to confusion with *C. m. minuta*, while Boeck's record from Cochabamba, Bolivia, must refer to some other species.

Piauíhy: Arára, ♀ ad., Jan. 20, 1925; Ibiapaba, two ♂♂ ad., ♀ juv., Dec. 29, 30, 1924, Jan. 7, 1925 (Conover Collection).

Ceará: Varzea Formosa, four ♂♂ ad., ♀ ad., Feb. 25, March 2, 3, 1925 (Conover Collection).

This series, as well as another from Bahia, agrees perfectly with specimens from British Guiana, while birds from Paraguay (Villa Rica), in the male sex, are generally of a purer, more uniform gray on the head and hind neck.

The typical race of the Plain-breasted Ground Dove is widely distributed throughout the campo districts of Brazil, from Maranhão, Ceará, and Pernambuco south to São Paulo and Matto Grosso, thence ranging into Paraguay. It is absent from the Amazon Valley, but reappears in the Urubamba Valley, eastern Peru,² in French and British Guiana, and in the savannas around Ciudad Bolívar, Venezuela, where it reaches the northern limit of its range.³

In the arid littoral of Peru, from Lima to Libertad, it is represented by a slightly smaller form of duller coloration, entitled to the name *C. minuta amazilia* Bonaparte,⁴ while in Colombia and Central America the decidedly darker *C. minuta elaeodes* Todd takes its place.

446. *Chamaepelia talpacoti talpacoti* (Temminck).

Columba talpacoti Temminck (and Knip), Les Pigeons, 1, Colombigallines, p. 22, pl. 12, 1811—"l'Amérique méridionale"—Brazil (auct. Brabourne and Chubb).

Goyaz: Philadelphia, lower Tocantins, ♀ ad., Dec. 10, 1925.

Maranhão: Carolina, ♀ ad., Nov. 13, 1925; Barra do Corda, ♂ ad., ♀ ad., Sept. 16, 1924; Fazenda Inhuma, Alto Parnahyba, two ♀♀ ad., July 20, 23, 1925; São Francisco, opposite Amarante, Rio Parnahyba, two ♂♂ ad., ♀ ad., juv., June 8, July 5, 6, 1925; São Bento, ♂ ad., Sept. 12, 1923; Codó, Cocos, ♀ juv., June 26, 1924.

Piauíhy: Arára, two ♂♂ ad., Jan. 21, Feb. 9, 1925; Ibiapaba, ♂ ad., Jan. 13, 1925.

¹*Chamaepelia griseola* (not of Spix) Forbes, Ibis, 1881, p. 357 (spec. in British Museum examined).

²A single specimen was even recorded from Xeberos, northern Peru (see Sclater and Salvin, P. Z. S. Lond., 1867, p. 753; 1873, p. 306).

³It is not found either in Trinidad or along the Caribbean coast of Venezuela.

⁴*Chamaepelia amazilia* Bonaparte, Consp. Av., 2, p. 78, 1854—Peru (the type examined in the Paris Museum is from Lima).

Ceará: Varzea Formosa, ♂ ad., ♀ ad., two ♀ ♀ juv., Feb. 24, 28, March 5, 1925.

Not different from specimens from other parts of Brazil (Bahia; São Paulo; Matto Grosso), Misiones, and Paraguay (Villa Rica).

C. arthuri Bangs and Penard¹ was evidently based on individual variants of the present species, since we find, in the same locality, specimens with plain dusky primaries, others with a distinct cinnamonaceous tinge on the inner webs, and others again that are variously intermediate between these two stages. A male from Therezopolis, Rio has even more rufous on the primaries than a topotype of *C. arthuri* from Surinam. The under wing coverts are frequently mixed with rufous in specimens of true *talpacoti* from southern Brazil and Argentina.

The Talpacoti Ground Dove has an extensive distribution in eastern South America. It ranges from the three Guianas all over Brazil south to Rio Grande do Sul, and west to northern Argentina, eastern Bolivia, and eastern Peru. In Venezuela, Trinidad, Colombia (except the Cauca Valley), and Central America it is replaced by *C. t. rufipennis* (Bonaparte) which, though strongly marked, is obviously but a geographical representative.

447. *Uropelia campestris* (Spix).

Columbina campestris Spix, Av. Bras., 2, p. 57, pl. 75, fig. 2, 1825—"in campis Bahiae" (type in Munich Museum examined).

Columbina (*Uropelia*) *campestris* Reiser, pp. 87, 192—Lagôa do Saco (road from Santo Antonio de Gilboez to Santa Philomena) and Santa Philomena, Piauhý.

Maranhão: Codó, Cocos, three ♂ ♂ ad., June 20, 23, 30, 1924.

Goyaz: Philadelphia, lower Tocantins, six ♂ ♂ ad., Nov. 28, Dec. 11, 14, 1925.

"Iris blue, bare skin round the eye yellow or orange, feet yellowish brown, bill black."

Identical with a series from São Marcello, Rio Preto, Bahia in Field Museum.

This delicately colored Ground Dove is one of the most characteristic species of the Brazilian table-land.² It ranges from Matto Grosso and western Minas Geraes (Paracatú) through Goyaz and

¹Bull. Mus. Comp. Zool., 62, p. 45, 1918—Vicinity of Paramaribo, Surinam.

²Reiser's assumption (l. c., p. 192) that the center of its distribution lies in the Amazonian region is entirely unfounded.

Bahia north to Piauhý, Maranhão, and the island of Marajó,¹ and extends west into the plains of eastern Bolivia.

448. *Claravis pretiosa* (Ferrari-Perez).

Peristera pretiosa Ferrari-Perez, Proc. U. S. Nat. Mus., 9, p. 175, 1886—new name for *Columba cinerea* (not of Scopoli, 1786) Temminck (and Knip), Les Pigeons, 1, Colombes, p. 126, pl. 58, 1811—Brésil.

"*Claravis cinera* (= *pretiosa*)" (sic) Reiser, pp. 88, 192—Amaração, coast of Piauhý.

Maranhão: Tranqueira, ♂ ad., Aug. 29, 1925 (Conover Collection).

Additional specimen.—Piauhý: Amaração, ♀ ad., Sept. 19, 1903. O. Reiser (Vienna Museum).

The specimens agree with others from Bahia and São Paulo.

Though nowhere common, the Blue Ground Dove is extensively distributed throughout Central and South America down to Paraguay and northern Argentina, without undergoing any noticeable geographical variation.

449. *Leptotila rufaxilla rufaxilla* (Richard and Bernard).

Columba (rufaxilla) Richard and Bernard, Act. Soc. Hist. Nat. Paris, 1, (1), p. 118, No. 74, 1792—Cayenne.

Maranhão: Tury-assú, Alto de Alegria, ♀ ad., Nov. 21, 1923.

Very slightly paler above than specimens from Surinam and British Guiana.

L. r. rufaxilla is peculiar to the Guianas and Lower Amazonia, west to the Jamundá and Rio Madeira, and, like so many other Amazonian forms, extends east into the forested districts of northern Maranhão.²

450. *Leptotila verreauxi approximans* Cory.

Leptoptila ochroptera approximans Cory, Field Mus. Nat. Hist. Pub., Zool. Ser., 12, p. 7, 1917—Serra de Baturité, Ceará.

Leptoptila ochroptera (not of Pelzel) Reiser, pp. 88, 192—Parnaguá, Pedrinha, and numerous localities along the Rio Parnahyba, Piauhý.

¹The record from the Lagôa de Amapá, northern Pará, by Goeldi (Ibis, 1897, p. 164) is open to doubt.

²About the allied races, see Chapman, Bull. Amer. Mus. Nat. Hist., 34, pp. 367-370, 1915.

Maranhão: Tury-assú, ♂ ad., Nov. 26, 1923; São Luiz, ♂ ad., Aug. 21, 1923; Grajahú, ♂ ad., Oct. 29, 1924; Fazenda Inhuma, Alto Parnahyba, ♂ ad., two ♀ ♀ ad., July 27, 29, 1925.

Piauhy: Arára, ♂ ad., Feb. 12, 1925; Deserto, ♂ ad., April 7, 1924; Ibiapaba, ♀ ad., Dec. 26, 1924.

Additional specimens.—Piauhy: Parnaguá, ♂ ad., May 16, 1903; Pedrinha, ♂ ad., May 21, 1903. O. Reiser (Vienna Museum).—Ceará: Serra de Baturité, ♂ ad., July 19, 1913. R. H. Becker (type of subspecies).

This series clearly indicates the validity of Cory's form *approximans*, originally based on a single male in worn plumage from Ceará. Compared with a very satisfactory series of some twenty specimens from southern Brazil, the northern birds average smaller and paler, particularly on the under parts. The two skins from the forested coast district (Tury-assú, São Luiz) agree with those from the interior.

L. v. approximans is very closely related to, and evidently but subspecifically distinct from, the eastern race of *L. verreauxi*, of Guiana and the north bank of the lower Amazon,¹ differing merely by decidedly grayish (instead of pale pinkish cinnamon) forehead, and the absence of the conspicuous vinaceous-russet tinge on the sides of the posterior crown behind the eye, besides some minor average characters.

Its range extends southwards into northern Bahia, whence Field Museum has two perfectly typical examples from Rio do Peixe, near Queimadas, and an adult female from São Marcello, Rio Preto; whereas an adult male from the latter locality, in size and coloration, closely approaches the larger, darker southern form, long known as

¹The earliest available name for it is *Peristera brasiliensis* Bonaparte (Compt. Rend. Ac. Sci. Paris, 43, p. 945, 1856), which antedates both *Leptoptila verreauxi macconnelli* Chubb (Bull. Brit. Orn. Cl., 38, p. 32, 1917—British Guiana) and *Leptotila verreauxi tenella* Penard (Proc. New Eng. Zool. Cl., 8, p. 35, 1923—Schotelweg, Lelydorp, Surinam). As I have ascertained by careful comparison with material from various localities especially selected for that purpose, the type in the Paris Museum (an adult bird of unknown origin, brought by Geoffroy Saint-Hilaire from his voyage to Lisbon) agrees with specimens from French and Dutch Guiana, from which those of British Guiana and the Rio Branco are inseparable. This race must, therefore, stand as *Leptotila verreauxi brasiliensis* (Bonaparte).

Peristera brasiliensis Gray (List Spec. Brit. Mus., 4, Columbæ, p. 54, 1856), being a pure nomen nudum, has no nomenclatorial standing, and Salvadori (Cat. B. Brit. Mus., 21, p. 556, 1893) is mistaken in listing as types, under *L. ochroptera*, two specimens in the British Museum.

ochroptera,¹ which ranges at least as far north as central Bahia, since two adults taken by R. H. Becker at Macaco Secco, near Andaraí, are indistinguishable from Minas Geraes and São Paulo birds. The southward extension of its range is hard to define, as no fast line can be drawn against *L. v. chlorauchenia* which differs solely by larger size. In the west, however, it seems to extend, without apparent change, across Matto Grosso and Bolivia to eastern Peru. Birds from the latter country, which have been described as *Leptoptila intermedia* by Chubb,² I am unable to satisfactorily distinguish from a Brazilian series.

451. *Penelope superciliaris jacupemba* Spix.³

Penelope jacupemba Spix, Av. Bras., 2, p. 55, pl. 72, 1825—Presidio do São João, Rio de Janeiro (type in Munich Museum examined).

Penelope superciliaris jacupemba Reiser, pp. 88, 195—Lagôa Missão, near Parnaguá, Piauí.

Maranhão: Fazenda Inhumá, Alto Parnahyba, two ♀ ♀ ad., July 26, 29, 1925; Tranqueira, two ♀ ♀ ad., Aug. 21, 29, 1925.

Goyaz: Santo Antonio (Bôa Vista), lower Tocantins, ♂ ad., Jan. 27, 1926.

Piauí: Deserto, ♂ ad., ♀ ad., ♀ juv., April 5, 7, 1925.

Additional specimens.—Maranhão: Bôa Vista, ♂ ad., Dec. 18, 1906. F. Schwanda (Conover Collection).—Piauí: Lagôa da Missão, near Parnaguá, two ♂ ♂, ♀ ad., May, 1903. O. Reiser (Vienna Museum).

¹*Leptoptila ochroptera* Pelzelin (Orn. Bras., 3, p. 278, 1870) was published without any description and thus rests exclusively on the bibliographic references cited by its creator. The first quotation, Azara's No 320, is ambiguous and might refer just as well to *L. ochroptera* auct. as to *L. reichenbachii*. Wagler's description appears to have been made from a bird of the "*ochroptera*"-*chlorauchenia* type, though the synonyms *C. rufaxilla* Rich. & Bern. and *C. frontalis* Temm. do not at all belong here. Wied's and Burmeister's accounts doubtless refer to *L. reichenbachii*, whereas *L. rufaxilla* Bonaparte and Reichenbach are indefinite mixtures of *L. rufaxilla* and *L. reichenbachii*. Under these circumstances, I am afraid that *L. ochroptera* Pelzelin will have to be dropped as undeterminable. The proper name for the south-Brazilian form appears to be *Homoptila decipiens* Salvadori (Atti Accad. Sci. Torino, 6, p. 131, 1871—Brazil), based on specimens lacking the attenuated outermost primary.

²Bull. Brit. Orn. Cl., 38, p. 17, 1917—"Central South Peru."—The type examined in the British Museum is an adult male secured by H. Whitely, Jr., on August 19, 1874, at Huirô, Urubamba Valley, Peru, and agrees well with one from Chinchao, dept. Huánuco, in Field Museum. Chubb is quite confused in his description.

³Two additional members of the Cracidae possibly occur in the region covered by the present paper. Marcgrave's "Mitu Poranga" (Hist. Nat. Bras., p. 195) appears to be *Crax sclateri sclateri* Gray (nearest recorded locality Rio Araguaia, Goyaz), and the same author's "Mitu" (l. c., p. 194) forms the basis of *Mitu mitu* (Linnaeus), known to range from Pará to the confines of Peru.

The more satisfactory material now available tends to show that the limits assigned to this form in my review of Spix's types¹ require modification.

Penelope superciliaris Temminck² was originally based upon specimens secured by one of Count Hoffmannsegg's collectors in the vicinity of Pará. Five skins from this district (Peixe-Boi; Igarapé-assú; Rio Acará) and four from the Rio Madeira (Borba and Forte do Principe) are characterized by decidedly greenish general coloration, with rather narrow, deep hazel margins to the inner secondaries, wing coverts and tail coverts, and obsolete pale grayish or grayish buff superciliaries.

Birds from eastern and southern Brazil are duller, more grayish, especially on the breast; the rufous markings on the wings and tail coverts are wider and paler, varying from hazel to ochraceous tawny, and the superciliary streak is much more strongly pronounced. For some time I was inclined to subdivide the inhabitants of eastern Brazil into a northern form with rufescent, and a southern one with grayish eyebrows, and while I have yet to see from the southern states specimens with intensely rufous superciliaries, the present series exhibits such a remarkable variation in this respect that I feel that much more material is needed before anything like a final conclusion can be reached. The type of *P. jacupemba* Spix, stated to be from the Indian Village Presidio of São João, in the state of Rio de Janeiro, agrees with certain northern examples, particularly an adult male from Deserto, Piauhý (Conover Collection, No. 3202), in having the superciliary streak slightly tinged with buffy; whereas in most of the other (twelve) specimens seen from southern Brazil this marking is of a clear ashy gray. A female from Deserto, Piauhý and the male from Santo Antonio, Goyaz, however, so closely approach the latter as to be almost indistinguishable. On the other hand, three individuals from the vicinity of Parnaguá, Piauhý, in the Vienna Museum, as well as two females from Tranqueira and one from Fazenda Inhumá, obtained by Snethlage, are conspicuous by their light ochraceous buff to ochraceous tawny superciliaries, which join each other in front so as to form a distinct band across the forehead.

For the present, I propose to unite, under Spix's name, the birds of eastern Brazil (from Maranhão to Rio Grande do Sul and Matto

¹Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 690-691, 1906.

²Hist. Nat. Pig. et Gall., 3, pp. 72, 693, 1815.

Grosso) and Misiones, restricting typical *superciliaris* to the Amazon Valley, from Pará to the Rio Madeira.

452. *Penelope jacu-caca* Spix.

Penelope jacu-caca Spix, Av. Bras., 2, p. 53, pl. 69, 1825—near Poçoens Encima, state of Bahia (type in Munich Museum examined); Reiser, pp. 88, 193—Lagôa Missão, near Parnaguá, Piahy.

Piahy: Deserto, ♀ ad., April 12, 1925 (Conover Collection).

In addition, I have examined in the Vienna Museum three examples secured by O. Reiser in the vicinity of Parnaguá, in May, 1903.

The "Jacú açu" of the natives has been recorded only from the states of Piahy and Bahia. In the Tring Museum there are three specimens collected by Alphonse Robert at Lamarão, near Bahia City, on May 19, 1901.

P. jacu-caca is nearly related to *P. ochrogaster* Pelzeln, of Matto Grosso and Goyaz, and *P. pileata* Wagler, of Amazonia. They form a natural group in the genus, characterized by the narrow black streak, separating the white superciliaries from the unfeathered sides of the head, and may be conspecific.

453. *Ortalis spixi* Hellmayr.

Ortalis spixi Hellmayr, Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 693, 695, 1906—Rio Itapicurú, Maranhão; Reiser (2), p. 196, 1925—Riacho da Raiz, below União, and Barra do Cocal, lower Parnahyba, Piahy.

Penelope araucuan Spix, Av. Bras., 2, p. 56, pl. 74, 1825—part, female, Rio Itapicurú, Maranhão.

Ortalis araucuan Reiser (1), p. 88, 1910—Riacho da Raiz and Barra do Cocal, Piahy.

Maranhão: Codó, Cocos, ♀ ad., June 21, 1924 (Conover Collection).

Goyaz: Santo Antonio, lower Tocantins, ♀ ad., Feb. 24, 1926 (Conover Collection).

This Guan is peculiar to northern Brazil south of the Amazon, ranging from the Tocantins east to the lower Parnahyba, Piahy. Farther south and east, from Pernambuco to Minas Geraes and Espirito Santo, it is replaced by the very different *O. araucuan* (Spix) [= *albiventris* (Wagler).]

454. *Odontophorus capueira plumbeicollis* Cory.

Odontophorus plumbeicollis Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 294, 1915—Serra de Baturité, Ceará.

Ceará: Serra de Baturité, ♂ (molting), July 21, 1913. R. H. Becker (type).

Compared with fourteen *O. c. capueira*, from southern Brazil (São Paulo and Santa Catharina) and Misiones, the unique type differs very slightly by having the throat and foreneck vermiculated with blackish (instead of plain gray), the breast tinged with pale buffy brownish, the rufous frontal band and superciliaries somewhat narrower, and the hind neck almost devoid of light markings. The specimen being in rather poor condition, the validity of this form—which is at best a poorly marked subspecies—needs corroboration by additional material.

O. c. capueira is known to inhabit eastern Brazil, from Rio Grande do Sul as far north as southern Bahia, besides being found in Paraguay and Misiones.

455. *Opisthocomus hoazin* (Müller).

Phasianus hoazin P. L. S. Müller, *Natursyst.*, Suppl., p. 125, 1776—based on Daubenton, Pl. Enl. 337, Cayenne.

Opisthocomus cristatus Martius, *Reise Bras.*, 2, p. 829, 1828—Rio Itapicurú, Maranhão.

"*Opisthocomus cristatus* (Gm.) (= *hoazin* P. L. S. Müller)" (sic) Reiser, pp. 88, 196—lower Rio Parnahyba, Piauhy.

Maranhão: Tury-assú, ♀ ad. (molting), Oct. 31, 1923.

The "Cigana" is generally distributed in the Amazonian forest region from the Guianas, the Orinoco Valley, and the Rio Meta south to the sources of the Rio Araguaya and Rio Madeira.

[456. *Cryptuornis*¹ *soui soui* (Hermann).

Tinamus soui Hermann, *Tab. Affin. Anim.*, p. 165, 1783—based on "Le Soui" Buffon, *Hist. Nat. Ois.*, 4, p. 512 and Daubenton, Pl. Enl. 829, Cayenne.

Crypturus pileatus Reiser (1), p. 100, 1910—Miritiba, Maranhão.

Crypturus soui Reiser (2), p. 244, 1925—Miritiba.

Reiser records two males taken by the late F. Schwanda at Miritiba on November 8, 1907, and February 4, 1908. We have no material; but as specimens from the Pará district appear to be inseparable from Guianan skins, it may reasonably be assumed that they are referable to the typical race, which probably reaches the eastern

¹*Cryptuornis* Oberholser (*Proc. Biol. Soc. Wash.*, 35, p. 74, 1922), type *Tetrao cinereus* Gmelin.

limit of its range in the forested coast belt of Maranhão, this being the case with many other Guianan and Lower-Amazonian species.

In eastern Brazil, from Pernambuco to Rio de Janeiro, another closely allied form, *C. soui albigularis* Brabourne and Chubb¹ takes its place.]

457. ***Crypturornis undulatus vermiculatus*** (Temminck).

Tinamus vermiculatus Temminck, Nouv. Rec. Pl. Col., livr. 62, pl. 369, 1825—Brazil, coll. Auguste de Saint-Hilaire (type in Paris Museum examined).

Crypturus adpersus (not of Temminck) Reiser, pp. 98, 245—Santa Philomena, Cachoeiras, Ilha São Martin, and Caiçara, Rio Parnahyba, Piauhy.

Maranhão: Tranqueira, ♂ ad., Sept. 12, 1925 (Conover Collection).

Additional specimen.—Piauhy: Caiçara, Rio Parnahyba, ♀ ad., Sept. 9, 1903. O. Reiser (Vienna Museum).

Allowing the usual amount of individual variation, these specimens agree well with others from western Minas Geraes (Rio Jordão, near Araguary) and Goyaz (Rio Araguaya). The type of *T. vermiculatus*, obtained by Saint-Hilaire in the interior of Brazil, I found to be referable to the same form, so there is no doubt as to its proper appellation. Salvadori's reference of a specimen from Piauhy to *C. u. adpersus*, as recorded by Reiser (l. c., p. 245), is certainly erroneous. *Tinamus adpersus* Temminck,² based on an example from the state of Pará, appears to be restricted to the lower Amazon, from the Tapajóz to the Rio Madeira. The type agrees minutely with birds from the Rio Tapajóz (Villa Braga).

While admitting that *vermiculatus* and *adpersus* are closely related, I still hold that, if two forms be distinguished, the birds from the interior of Maranhão and Piauhy must go with *vermiculatus*, an arrangement which is, furthermore, supported by geographical considerations.

The examination of much additional material, since dealing with this group,³ leads me to the conclusion that the birds found in Paraguay, Bolivia, and Matto Grosso merely constitute a strongly marked race, the apparent gap being bridged over to a certain extent by

¹Ann. Mag. Nat. Hist., (8), 14, p. 320, 1914—Rio de Janeiro.

²Hist. Nat. Pig. et Gall., 3, pp. 585, 751, 1815—"dans la province de Pará" (type in Berlin Museum examined).

³Abhhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 702-705. 1906.

C. u. confusus Brabourne and Chubb,¹ from the left bank of the Rio Madeira.

Therefore, their relationship appears to be more correctly expressed by trinomial nomenclature as follows:

(a) *Crypturornis undulatus undulatus* (Temminck).—Paraguay, eastern Bolivia, and western Matto Grosso.²

(b) *Crypturornis undulatus confusus* (Brabourne and Chubb).—Only known from a single specimen from Humaythá, left bank of the Rio Madeira.

(c) *Crypturornis undulatus yapura* (Spix).—Eastern Peru and northwestern Brazil (Rio Juruá and Rio Solimões).

(d) *Crypturornis undulatus adpersus* (Temminck).—Northern Brazil south of the Amazon, from the Tapajóz to the right bank of the Rio Madeira.³

(e) *Crypturornis undulatus vermiculatus* (Temminck).—Eastern Brazil, from Maranhão and Piahy south through Goyaz to western Minas Geraes and northern São Paulo.

[458. *Crypturornis noctivagus noctivagus* (Wied).

Tinamus noctivagus Wied, Reise Bras., I, p. 160 (8vo ed., p. 158), 1820—Muribacca, Rio Itabapuana, Espirito Santo.

Crypturus noctivagus Reiser, pp. 98, 246—Serra near Parnaguá, and Saco Gorge on the road from Parnaguá to Santo Antonio de Gilboez, Piahy.

Reiser found this scarce species on the dry slopes of the Serra near Parnaguá, in southern Piahy. Dr. Snethlage did not meet with it.

C. n. noctivagus is restricted to eastern Brazil, ranging from Piahy south to Rio Grande do Sul. It is apparently nowhere common. In British Guiana, Venezuela, and on the north bank of the Amazon (Obidos), it is replaced by *C. noctivagus dissimilis* Salvadori.]

459. *Microcrypturus tataupa tataupa* (Temminck).

Tinamus tataupa Temminck, Hist. Nat. Pig. et Gall., 3, pp. 590, 752, 1815—based on Azara, No. 329 (Paraguay), and Brazilian specimens in the collections at Lisbon and Paris.

¹Ann. Mag. Nat. Hist., (8), 14, p. 321, 1914—Humaythá, Rio Madeira.

²Three specimens from Molinas-cué, Paraguay (*undulatus*) and twelve from Buenavista, Bolivia (*scolopax* Bonaparte; *radiatus* Gray), in the Conover Collection, prove to be inseparable from each other.

³*C. undulatus simplex* (Salvadori), from British Guiana and the Rio Branco, is doubtfully separable.

⁴*Microcrypturus* Chubb (Bull. Brit. Orn. Cl., 28, p. 30, 1917; type *Tinamus tataupa* Temminck).

Crypturus tataupa Reiser, pp. 98, 244—Burity, near Parnaguá, Santa Philomena, and Barroca do Maranhão, Piauhý.

Piauhý: Ibiapaba, ♂ imm., Jan. 7, 1925 (Conover Collection).

Ceará: Varzea Formosa, ♀ ad., Feb. 21, 1925 (Conover Collection).

Additional specimen.—Ceará: Juá, near Iguatú, ♀ ad., July 30, 1913. R. H. Becker.

I cannot discover any racial variation in a large series from Paraguay, various parts of Brazil, and Argentina (Misiones and Tucumán). Even Peruvian birds¹ seem barely separable by reason of slightly deeper rufous brown backs and longer bills.

M. t. tataupa ranges all over Brazil from Piauhý, Ceará, and Pernambuco south to São Paulo and Matto Grosso.

460. *Microcrypturus parvirostris* (Wagler).

Crypturus parvirostris Wagler, Syst. Av., Genus *Crypturus*, sp. 13, 1827—Brazil, Spix coll.; we suggest Bahia (type in Munich Museum examined).

Maranhão: Fazenda Inhuma, Alto Parnahyba, two ♀ ♀ ad., July 19, 31, 1925.

Piauhý: Arára, ♂ ad., Jan. 29, 1925.

Additional specimen.—Ceará: Juá, near Iguatú, ♂ ad., July 30, 1913. R. H. Becker.

These examples appear to be identical with others from Bahia (São Marcello, Rio Preto), São Paulo (Victoria), and Paraguay (Villa Rica). Birds from the Rio Madeira (Humaythá) and Peru (Santa Ana, Urubamba) are somewhat smaller.

In the north, this species ranges to the island of Marajó and the south bank of the Amazon, but the center of its distribution lies in the semiarid table-land of Brazil.

461. *Nothura boraquira* (Spix).

Tinamus boraquira Spix, Av. Bras., 2, p. 63, pl. 79, 1825—"in campis petrosis districtus admantini"² (type in Munich Museum examined).

Nothura boraquira Ihering, Cat. Faun. Braz., 1, p. 10, 1907—Parnaguá, Piauhý: Reiser (2), p. 248—Parnaguá, Pedrinha, Burity, Rio Fundú, and Caitetú, Rio Parnahyba, Piauhý.

¹*Crypturus tataupa peruviana* Cory, Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 293, 1915—San Ramón, dept. Junín, Peru.

²Reinhardt (Vidensk. Medd. Naturhist. Foren., 1870, p. 51) denies its occurrence in Minas Geraes, and it is quite possible that the type came from Bahia or Piauhý rather than from the diamond district.

Ceará: Quixada, ♀ ad., June 30, 1913; Juá, near Iguatú, ♀ ad., Aug. 30, 1913. R. H. Becker.

Not quite so grayish as the type and specimens from Lamarão, near Bahia City, but doubtless belonging to the same form. The characters of this very distinct species have been set forth in my review of Spix's types.¹

N. boraquira is now known to be rather common in northeastern Brazil, its range extending from Bahia north to Ceará and Piauhý.

Three recently collected specimens from Buenavista, Bolivia, in the Conover Collection, tend to confirm my belief that *N. marmorata* Gray² is inseparable, despite its widely remote habitat.

462. *Rhynchotus rufescens cattingae* Reiser.

Rhynchotus rufescens cattingae Reiser, Anzeiger Ak. Wiss. Wien, 42, p. 324, 1905—Palmeirinhas (type) and Corrientes, Rio Parnahyba, Piauhý; idem, Denks. Math.-naturw. Kl. Ak. Wiss. Wien, 76, p. 98, 1910; p. 247, 1925—same localities.

Maranhão: Codó, Cocos, ♀ ad., July 7, 1924.—Wing, 185; bill 42 (Conover Collection).

Additional specimens.—Piauhý: Palmeirinhas, ♂ ad., May 10, 1903 (type); Corrientes, Rio Parnahyba, ♂ ad., July 26, 1903. O. Reiser (Vienna Museum).

The two original specimens, when compared with a large series of typical *rufescens*³ from São Paulo, Paraná, Minas Geraes, and Matto Grosso,⁴ are indeed more grayish (less buffy) on the belly, and have the upper parts grayish brown rather than brownish, with the pale transverse bands more whitish. Two skins from Humaythá (left bank of the upper Rio Madeira) are very similar. Still I feel a little doubtful about the validity of the race, since the bird procured by Dr. Snethlage is barely distinguishable from certain São Paulo and Paraguayan (Villa Rica) examples.

If there are two races in Brazil, the range of *R. r. cattingae* would seem to be singularly restricted. Birds from Lamarão, near Bahia City, are nowise different from those of more southern localities, and

¹Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 705-706, 1906.

²List Birds Brit. Mus., 5, Gallinae, p. 104, 1867—Bolivia (type examined).

³*Tinamus rufescens* Temminck, Hist. Nat. Pig. et Gall., 3, pp. 552, 747, 1815—Brazil (described from a single specimen in the Paris Museum).—The type no longer exists in the French National Collection, but doubtless came from southern Brazil. We suggest São Paulo as type locality.

⁴Five skins from Matto Grosso (*R. r. alleni* Chubb, Bull. Brit. Orn. Cl., 28, p. 30, 1917—Chapada) are exactly like a series from São Paulo.

the type of *Rhynchotus fasciatus* Spix¹ is likewise a normal example of typical *rufescens*. More material from the northern states is needed before the status of *R. r. catingae* can be definitely established.

[463. **Cariama cristata** (Linnaeus).

Palamedea cristata Linnaeus, Syst. Nat., 12th ed., 1, p. 232, 1766—based on "Cariama" Marcgrave, Hist. Nat. Bras., p. 203, northeastern Brazil.

Dicholophus cristatus Reiser, pp. 93, 221—Parnaguá, Pé do Morro, and other localities, Piahy.

Reiser found the Seriema at numerous places in Piahy. This singular bird is widely distributed in the table-land of Brazil.]

[464. **Eurypyga helias helias** (Pallas).

Ardea Helias Pallas, Neue Nord. Beytr., 2, p. 48, pl. 3, 1781—Brazil.

Eurypyga helias Reiser, pp. 93, 221—Riacho da Raiz and Barra do Cocal, Rio Parnahyba, Piahy.

The Vienna Academy Expedition met with the Sun Bittern on the Rio Parnahyba, and an immature female was collected on August 31, 1903, at Barra do Cocal, Piahy.]

465. **Rallus longirostris crassirostris** Lawrence.

Rallus crassirostris Lawrence, Ann. Lyc. Nat. Hist. N. Y., 10, p. 20, 1871—Bahia.

Maranhão: Mangunça Island, ♂ ad., ♀ ad., March 19, 22, 1924. —Wing (male) 143, (female) 126; bill 54, (female) 46.

"Iris brown, feet reddish brown, bill reddish brown, base of mandible red."

These specimens agree with another from Iguapé, São Paulo, which I take to be *R. crassirostris*. Material of typical *R. longirostris* from Guiana not being available, I am unable to make out whether the Brazilian is really separable and how far its range extends to the north.

466. **Pardirallus maculatus maculatus** (Boddaert).

Rallus maculatus Boddaert, Tabl. Pl. Enl., p. 48, 1783—based on "Râle tacheté, de Cayenne" Daubenton, Pl. Enl. 775, Cayenne.

Ceará: Quixada, ♀ ad., June 22, 1913. R. H. Becker.

I have also seen a young bird from São Lourenço, Pernambuco, in the Tring Museum.

¹Av. Bras. 2, p. 60, pl. 76c, 1825—São Paulo and Minas Geraes.

This Rail is widely distributed in South America, ranging south to Paraguay and Argentina.

467. *Aramides mangle* (Spix).

Gallinula mangle Spix, Av. Bras., 2, p. 74, pl. 97, 1825—"ad litora maris in locis paludosis, arbustis mangliferis obsitis"; we suggest coast of Bahia (types in Munich Museum examined).

Aramides mangle Reiser, pp. 95, 229—Amaração, delta of the Rio Parnahyba, Piauhý.

Piauhý: Arára, ♂ ad., Feb. 12, 1925 (Conover Collection).

The Vienna Academy Expedition also obtained a single male near Amaração, Piauhý, of this Rail, which is peculiar to eastern Brazil, from Piauhý south to Rio de Janeiro.

[468. *Aramides ypecaha* (Vieillot).

Rallus ypecaha Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 28, p. 568, 1819—based on Azara, No. 367, Paraguay and Buenos Aires.

Aramides gigas Reiser (1), p. 96, 1910—Parnaguá, Piauhý.

"*Aramides ypacaha* (= *gigas* Spix)" Reiser (2), p. 230, 1925—Lagôa near Fazenda do Santo Antonio, Lake Parnaguá, and Brejão, Piauhý.

The Ypecaha Rail was met with by O. Reiser at various localities in Piauhý. Specimens from eastern Brazil (*Gallinula gigas* Spix)¹ do not seem to differ from others taken near Buenos Aires, in spite of the range being apparently discontinuous. The species has been found in Paraguay, Uruguay, and the adjacent provinces of Argentina, and again in northern Minas Geraes (Contendas), Bahia (near Sambaiba, Rio São Francisco) and Piauhý, but there is no record from the intervening territory. Examination of a larger series from Brazil may yet reveal some geographical variation.]

469. *Aramides cajanea cajanea* (Müller).

Fulica cajanea P. L. S. Müller, Natursyst., Suppl., p. 119, 1776—based on Daubenton, Pl. Enl. 352, Cayenne.

Aramides cayanea Reiser, pp. 95, 230—below Colonia Floriano and Caiçara, Rio Parnahyba, Piauhý.

Maranhão: Codó, Cocos, ♀ ad., July 8, 1924 (Conover Collection).

¹Av. Bras., 2, p. 75, pl. 99, 1825—Contendas, Minas Geraes (type in Munich Museum examined).

Additional specimens.—Maranhão: Bôa Vista, ♀ ad., Nov. 23, 1907. F. Schwanda (Conover Collection).—Ceará: Juá, near Iguatú, ♂ imm., Aug. 1, 1913. R. H. Becker.

The Bôa Vista bird is an extremely pale variety, having the breast even lighter in color than *A. albiventris*, of Yucatán, while the two others do not differ from average examples from British Guiana and Paraguay.

It is now generally conceded¹ that the brownish wash on the hind crown has no geographical significance and cannot possibly be used for the discrimination of races in South America. In my review of Spix's types² I called attention to the pale grayish olive back in a pair from the Rio Boraxudo, state of Paraná, Brazil, suggesting the probable existence of a separable southern race (*A. cajanea chiricote* [Vieillot]).³ Four topotypes from Villa Rica, Paraguay, in the Conover Collection, however, do not support this view, since three of them are indistinguishable from Guianan specimens picked at random.

In French and Dutch Guiana as well as in Lower Amazonia (Borba, Rio Madeira; Rio Curicuriari, above Barcellos, Rio Negro; Pará) specimens with remarkably dark under parts are occasionally met with, but as they are associated with normally colored birds, I do not see how *Fulica ruficollis* Gmelin⁴ and *Aramides cajanea grahami* Chubb⁵ can be anything but individual variants of *A. cajanea*, although I have to admit that this dark "stage" is not represented by a single example in the large series examined from southern Brazil, Paraguay, and Argentina.

The types of *Aramides cajanea venezuelensis* Cory⁶ and *A. cajanea peruviana* Cory,⁶ from Encontrados, Zulia, Venezuela, and Moyobamba, Peru are likewise based on individual variation, and can be exactly matched by specimens from other localities.⁷

¹See Hellmayr, Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, pp. 712-713, 1906 and Bangs, Amer. Natur., 41, p. 180, 1907.

²Loc. cit., p. 713, 1906.

³*Rallus chiricote* Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 28, p. 551, 1819—based on Azara, No. 368, Paraguay.

⁴Syst. Nat., 1, (2), p. 700, 1789—based on "Black-bellied Gallinule" Latham, Gen. Syn. Birds, 3, (1), p. 253, Cayenne (type in Vienna Museum examined).

⁵Ibis, (11), 1, p. 53, 1919—Pará (type in British Museum examined).

⁶Field Mus. Nat. Hist. Pub., Orn. Ser., 1, p. 296, 1915.

⁷It may be stated here that Chubb (Ibis, 1919, p. 52) is no doubt confused in calling the back of *A. c. cajanea* "rufous brown." The anterior upper parts in these Rails vary from medal bronze and buffy olive to grayish olive, but are never brown or rufous.

[470. *Creciscus melanophaius lateralis* (Lichtenstein).

Crex lateralis Lichtenstein, Verz. Dubl. Berliner Mus., p. 79, 1823—Brazil (excl. cit. Azara, No. 376); type locality Bahia (see Lichtenstein, Nomencl. Av. Mus. Berol., p. 96, 1854).

Ortygometra (Creciscus) melanophaea Reiser (1), p. 96, 1910—Santa Philomena, Piauhý.

Creciscus (Ortygometra) melanophaeus Reiser (2), p. 230, 1925—same locality.

Piauhý: Santa Philomena, ♀ ad., July 16, 1903. O. Reiser (Vienna Museum).

On comparing twenty specimens of this Crake from various localities I notice that birds from Bahia northwards to British Guiana may generally be distinguished from those of Paraguay, Argentina (Buenos Aires), and southern Brazil (Rio to Santa Catharina) by having the lores, auricular region, and cheeks pinkish cinnamon rather than grayish. The difference, however, is not quite constant.

Of two specimens from British Guiana (*C. melanophaius macconnelli* Chubb),¹ one is identical with Bahia skins, while the other in the decidedly grayish sides of the head resembles topotypical *melanophaius*, from Paraguay. In Upper Amazonia, from southeastern Colombia to eastern Peru, another nearly allied race, *C. m. oenops* (Sclater and Salvin), is found.]

471. *Creciscus viridis viridis* (Müller).

Rallus viridis P. L. S. Müller, Natursyst., Suppl., p. 120, 1776—based on Daubenton, Pl. Enl. 368, Cayenne.

Maranhão: Ponto (Canella), ♀ ad., Aug. 29, 1924; Fazenda Inhuma, Alto Parnahyba, two ♀♀ ad., Aug. 3, 5, 1925.

I am unable to find any appreciable difference between ten skins from French and Dutch Guiana and fifteen from eastern Brazil (Pará, Maranhão, Pernambuco, Bahia, and Ilha Grande, near Rio de Janeiro).

Peruvian birds are slightly different and may stand as *C. viridis facialis* (Tschudi).²

[472. *Gallinula chloropus galeata* (Lichtenstein).

Crex galeata Lichtenstein, Verz. Säugeth. und Vögel Berliner Mus., p. 36, 1818—based on Azara, No. 379, Paraguay.

Gallinula galeata Reiser (2), p. 231, 1925—Rio Taquarussú, Piauhý.

Recorded by Reiser from the Rio Taquarussú in southern Piauhý.]

¹Birds Brit. Guiana, 1, p. 75, 1916—Bonasica River.

²*Crex facialis* Tschudi, Arch. Naturg., 9, (1), p. 388, 1843—Peru (type in Neuchâtel Museum examined; = juv.).

[473. *Ionornis martinica* (Linnaeus).

Fulica martinica Linnaeus, Syst. Nat., 12th ed., 1, p. 259, 1766—Martinique.

Porphyriola martinica Reiser (2), p. 231, 1925—Lake Parnaguá, Piauhý.

A few were observed by Reiser on the shores of Lake Parnaguá, in southern Piauhý.]

[474. *Aramus scolopaceus* (Gmelin) subsp.

Ardea scolopacea Gmelin, Syst. Nat., 1, (2), p. 647, 1789—based on Buffon and Daubenton, Pl. Enl. 848, Cayenne.

Aramus scolopaceus Reiser, pp. 93, 220—Parnaguá, Piauhý.

Reiser records the Limpkin from Parnaguá, Piauhý. In the absence of specimens, I am unable to ascertain whether they are referable to typical *scolopaceus* or to the larger southern *A. s. carau Vieillot*, which ranges at least as far north as Minas Geraes, since the type of *Rallus ardeoides* Spix,¹ in size, agrees with a topotypical example of the latter form from Paraguay.]

[475. *Theristicus caudatus* (Boddaert).

Scolopax caudatus Boddaert, Tabl. Pl. Enl., p. 57, 1783—based on Daubenton, Pl. Enl. 976, Cayenne.

Theristicus caudatus Reiser, pp. 92, 211—Burity, Fazenda Enseada, and Rio Parnahyba, Piauhý.

The Curiçaca was noticed by the members of the Vienna Academy Expedition at various localities in Piauhý from the vicinity of Parnaguá north to below Estreito, on the Rio Parnahyba. We have an adult male from São Marcello, Rio Preto, Bahia, which, except for the sexual difference in size, agrees well with a female from near Boa Vista, Rio Branco, Brazilian Guiana.

This Ibis is widely distributed in northern and eastern South America, ranging from Colombia, Venezuela, and Guiana all over Brazil south to northern Argentina and Paraguay. It was first described under its Brazilian vernacular name by Marcgrave,² who met with it along the Rio São Francisco, at Itapuama, and other places in northeastern Brazil.]

¹Av. Bras., 2, p. 72, pl. 91, 1825—near Contendas or Riachão, Minas Geraes (type in Munich Museum examined).

²Hist. Nat. Bras., p. 191, 1648.

[476. *Phimosus infuscatus*¹ *nudifrons* (Spix).

Ibis nudifrons Spix, Av. Bras., 2, p. 69, pl. 86, 1825—São Francisco River, Brazil.

Plegadis nudifrons Reiser, pp. 92, 212—Parnaguá, below São Estevão and above Colonia Floriano, Rio Parnahyba, Piauhý.

O. Reiser took an immature bird on the shore of Lake Parnaguá and noticed other individuals along the banks of the Rio Parnahyba.

When separating the Venezuelan form,² I was mistaken in assuming the bill and bare part of the head to be yellow in Brazilian birds. As a matter of fact, in freshly killed specimens, the bill is clay-color or chamois, and the face brick red, both parts fading to yellow in Museum skins.

In birds from the Orinoco Valley and Rio Chaura, near Mérida, Venezuela, the bare part of the head is dark carmine, while the bill is decidedly wood brown, with a blackish tip. This northern form may, therefore, stand as *P. infuscatus berlepschi*.

Spix's Bare-faced Ibis is peculiar to Brazil south of the Amazon, ranging from Piauhý down to Rio de Janeiro and São Paulo, and west to Matto Grosso.]

477. *Guara rubra* (Linnaeus).

Scolopax rubra Linnaeus, Syst. Nat., 10th ed., 1, p. 145, 1758—based on Catesby (Bahama Islands), Brisson (Cayenne), etc.

Guara rubra Reiser, pp. 92, 213—Amaração, coast of Piauhý.

Maranhão: Mangunça Island, ♂ ad., March 18, 1924.

Widely distributed in eastern tropical America, from the West Indies south to southeastern Brazil.³

[478. *Mycteria americana* Linnaeus.

Mycteria americana Linnaeus, Syst. Nat., 10th ed., 1, p. 140, 1758—based on "Jabiru-guaçu" Marcgrave, Hist. Nat. Bras., p. 200, northeastern Brazil.⁴

¹In spite of Messrs. Berlepsch and Hartert's contrary contention (see Nov. Zool., 9, p. 123, 1902, note) I do not see how we can avoid using *Ibis infuscata* Lichtenstein (Verz. Dubl. Berliner Mus., p. 75, 1823) for the Paraguayan form of this Ibis, in view of his quoting Azara's No. 365, where an excellent description is given.

²Verh. Zool. Bot. Ges. Wien, 53, p. 247, 1903.

³The most southerly locality on record appears to be Guaratuba, on the coast of the Brazilian state of Paraná, where Auguste de Saint-Hilaire (Mém. Mus. Hist. Nat. Paris, 9, p. 353, 1822) found the Red Ibis very abundant.

⁴See Hellmayr, Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 711, 1906.

Tantalus loculator Reiser, pp. 92, 124—Bôa Vista, near Brejão (road from Santo Antonio de Gilboez to Santa Philomena) and below Villa Nova, Rio Parna-hyba, Piauhý.

The Wood Ibis was observed by the members of the Vienna Academy Expedition.]

[479. *Ardea cocoi* Linnaeus.

Ardea Cocoi Linnaeus, Syst. Nat., 12th ed., 1, p. 237, 1766—based on Brisson, Cayenne; Reiser, pp. 92, 215—Parnaguá, Lake Parnaguá, Brejão, and Rio Parna-hyba, Piauhý.

The Cocoi Heron was met with by the Vienna Academy Expedi-tion. Generally distributed in eastern South America.]

[480. *Casmerodius albus egretta* (Gmelin).

Ardea egretta Gmelin, Syst. Nat., 1, (2), p. 629, 1789—based on Buffon's "Grande Egrette," Cayenne, Santo Domingo, and Louisiana; Reiser (1), p. 92, 1910—Lake Parnaguá, Piauhý.

Herodias egretta Reiser (2), p. 215, 1925—Lake Parnaguá, Lagôa do Rio Fundú, and Amaração, Piauhý.

Recorded by Reiser from Piauhý. Generally distributed through-out temperate and tropical America.]

[481. *Egretta thula thula* (Molina).

Ardea thula Molina, Saggio Stor. Nat. Chile, pp. 235, 344, 1782—Chile.

Ardea candidissima Reiser (1), p. 92, 1910—Pedrinha, Lake Parnaguá, Piauhý.

Herodias candidissima Reiser (2), p. 216, 1925—Lake Parnaguá, Lagôa do Rio Fundú, Colonia Floriano and Amaração, Piauhý.

The Snowy Egret, widely diffused in North and South America, is recorded by Reiser from various localities in Piauhý.]

[482. *Florida caerulea* (Linnaeus).

Ardea caerulea Linnaeus, Syst. Nat., 10th ed., 1, p. 143, 1758—"America septentrionalis" = Carolina (ex Catesby) accepted as type locality.

Florida caerulea Reiser, pp. 92, 217—Amaração, coast of Piauhý, and Miritiba, Maranhão.

Specimens of the Little Blue Heron were listed by Reiser from the coast districts of Piauhý and Maranhão.]

483. *Hydranassa tricolor tricolor* (Müller).

Ardea tricolor P. L. S. Müller, Natursyst., Suppl., p. 111, 1776—based on Daubenton, Pl. Enl. 350, Cayenne.

Hydranassa tricolor Ihering and Ihering, Cat. Faun. Braz., 1, p. 407, 1907—Primeira Cruz, Maranhão.

Florida tricolor Reiser, pp. 92, 217—coast of Piauhý.

Maranhão: Tury-assú, ♂ ad. (in breeding plumage), Dec. 27, 1923.—Wing 230; tail 80; bill 84.

With somewhat longer wings, but otherwise agreeing with Guianan examples.

The Tricolored Heron ranges from British Guiana south along the coast to the delta of the Rio Parnahyba, Piauhý. Allied races are found in Trinidad, the West Indies, Central America, and southern North America.¹

484. *Butorides striata* (Linnaeus).

Ardea striata Linnaeus, Syst. Nat., 10th ed., 1, p. 144, 1758—Surinam.

Butorides striata Reiser (1), p. 93, 1910—coast of Piauhý; idem (2), p. 219, 1925—Marúas, lower Parnahyba, Piauhý.

Butorides virescens (not of Linnaeus) Reiser (2), p. 219, 1925—Amaração, Piauhý.

Maranhão: São Bento, ♀ ad., ♀ imm., Aug. 27, 31, 1923.

Piauhý: Ibiapaba, ♀ juv., Dec. 14, 1924.

Like specimens from Guiana and other parts of Brazil. I have little doubt that the bird from Amaração mentioned by Reiser will also turn out to belong to *B. striata*, which, in juvenile plumage, is often very hard to distinguish from *B. virescens*. No representative of the latter species has ever been found in eastern South America, although local races are known to inhabit the island of Tobago and the extreme northwest of the continent (Colombia and adjacent section of Venezuela).

The Black-crowned Heron is widely diffused in South America, ranging from Trinidad and Venezuela south to Argentina and Paraguay. I am not able to satisfactorily separate the southern form *B. s. cyanura*, recently revived by Wetmore.²

[485. *Nyctanassa violacea violacea* (Linnaeus).

Ardea violacea Linnaeus, Syst. Nat., 10th ed., 1, p. 143, 1758—based on Catesby, Carolina.

Nyctanassa violacea Reiser, pp. 93, 217—coast of Piauhý.

Reiser found the Yellow-crowned Night Heron in the delta of the Rio Parnahyba, where a young individual was obtained on September 16, 1903. Widely distributed in warm temperate and tropical America.]

¹See Nov. Zool., 13, p. 50, 1906.

²Bull. U. S. Nat. Mus., 133, p. 55, 1926.

[486. *Cochlearius cochlearius* (Linnaeus).

Cancroma cochlearia Linnaeus, Syst. Nat., 12th ed., 1, p. 233, 1766—based on Brisson, Cayenne; Reiser, pp. 93, 218—Illa do Meio, Lake Parnaguá, Piauhý.

The Vienna Academy Expedition met with a flock of the Boatbill on May 22, 1903, in the Illa do Meio, Lake Parnaguá, Piauhý.]

[487. *Nycticorax nycticorax naevius* (Boddaert).

Ardea naevia Boddaert, Tabl. Pl. Enl., p. 56, 1783—based on Daubenton, Pl. Enl. 939, Cayenne.

Nycticorax tayazu-guira Reiser, pp. 93, 218—Lake Parnaguá, Colonia Floriano and Caiçara, Rio Parnahyba, Piauhý.

Recorded by Reiser from various localities in Piauhý.

Specimens from eastern Brazil, at least as far south as Bahia, appear to me indistinguishable from Guianan birds, while Night Herons from the United States average slightly larger.]

[488. *Philherodius pileatus* (Boddaert).

Ardea pileata Boddaert, Tabl. Pl. Enl., p. 54, 1783—based on Daubenton, Pl. Enl. 907, Cayenne.

Nycticorax pileatus Reiser, pp. 93, 218—below União and Riacho Novo, Rio Parnahyba, Piauhý.

The Capped Heron, a species of wide distribution in Guiana, Amazonia, and Brazil south to Santa Catharina, was repeatedly met with by the Vienna Academy Expedition on the banks of the Rio Parnahyba, in Piauhý.]

[489. *Tigrisoma lineatum marmoratum* (Vieillot).

Ardea marmorata Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 415, 1817—based on Azara, No. 353 (= juv.), Paraguay.

Tigrisoma marmoratum Reiser, pp. 93, 219—Lake Parnaguá, Brejão, and Riacho da Raiz, Piauhý.

Piauhý: Lake Parnaguá, two ♀ ♀ ad., ♀ imm., ♂ imm., May and June, 1903. O. Reiser (Vienna Museum).

Maranhão: Primeira Cruz, ♂ ad., Sept. 28, 1906. F. Schwanda (Tring Museum).

Although it has not been possible to examine topotypical Paraguayan material, it seems pretty certain that the Tiger Bittern from northeastern Brazil is referable to *T. l. marmoratum*, as defined by the late Count Berlepsch.¹ Compared with *T. l. lineatum*, of Guiana

¹Journ. Orn., 35, pp. 30-31, 1887.

and Amazonia, the adults merely differ in larger size, wider black crown-streaks, and more extensive feathering at the base of the lower mandible. Two apparently immature specimens correspond to *T. bahiae* Sharpe,¹ and clearly show that this supposed species is nothing but an intermediate stage of plumage,² as pointed out by Reiser. Marcgrave's "Soco"³ no doubt refers to the juvenile dress of the present form.

T. l. marmoratum obviously replaces the Amazonian *T. l. lineatum*⁴ in the Brazilian highlands, Paraguay, and northern Argentina. Its exact range and that of the black-headed *T. fasciatum*, probably another representative form, have yet to be worked out.]

490. *Ixobrychus exilis erythromelas* (Vieillot).

*Ardea erythromelas*⁵ Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, p. 422, 1817—based on Azara, No. 360, Rio Paraguay.

Maranhão: São Bento, ♂ ad., ♀ juv., Aug. 27, Sept. 14, 1923.

Vieillot's Least Bittern, which is clearly conspecific with the North American form, has a wide range in tropical South America, extending from Colombia, Venezuela and Trinidad to Paraguay and southern Brazil.

491. *Jacana spinosa*⁶ *jacana* (Linnaeus).

Parra Jacana Linnaeus, Syst. Nat., 12th ed., 1, p. 259, 1766—based on "Jacana quarta species" Marcgrave (Hist. Nat. Bras., p. 191, northeastern Brazil); "Spur-winged Water-hen" Edwards (Glean. Nat. Hist., 3, p. 305, pl. 357, Surinam) and "Le Chirurgien brun" Brisson (Orn., 5, p. 125) in part;⁷ Surinam (ex Edwards) accepted as type locality (auct. Berlepsch, Nov. Zool., 15, p. 304, 1908).

¹Cat. B. Brit. Mus., 26, p. 196, pl. 2A, 1898—Bahia.

²A similar "phase" also occurs in the Guianan *T. l. lineatum* (cf. Todd, Ann. Carnegie Mus., 14, pp. 136-137, 1922).

³Hist. Nat. Bras., p. 199, 1648.

⁴The name of the Guianan Tiger Bittern may have to be changed, since *Ardea brasiliensis* Linnaeus (Syst. Nat., 12th ed., 1, p. 239, 1766) chiefly rests on "Le Héron, du Brésil" of Brisson (Orn., 5, p. 441, 1760) who, while referring to Marcgrave's "Soco," appears to have described a young bird from Cayenne sent by Artur to the Réaumur Collection. *Ardea soco* Wagler (Syst. Av., 1, Genus Ardea, sp. 30, 1827), on the other hand, covers both *T. lineatum* and *T. marmoratum*, because of references and habitat.

⁵Misp rinted *crythromelas*.

⁶*Fulica spinosa* Linnaeus (Syst. Nat., 10th ed., 1, p. 152, 1758—based exclusively on "The Spur-winged Water Hen" Edwards, Nat. Hist. Birds, 1, p. 48, pl. 48), in spite of the (evidently erroneous) locality Carthagera, is clearly referable to the Central American Jacana, both figure and description in Edwards's work being quite explicit with respect to the trifid posterior margin of the frontal shield.

⁷Neither the reference in Hernandez's work, quoted by Brisson, nor the specimen from Santo Domingo in the Réaumur Collection belongs to the present form.

Jacana jacana Reiser, pp. 95, 229—north of Pedrinha, Lake Parnaguá, Lagôa do Rio Fundú, Brejão, Rio Taquarussú, Poty, near Therezina, Riacho da Raiz, and Queimadas, Rio Parnahyba, Piahy.

Maranhão: São Bento, ♂ ad., Aug. 31, 1923; São Francisco (opposite Amarante), Rio Parnahyba, ♂ ad., July 5, 1925.

Piahy: Ibiapaba, ♂ ad., ♀ juv., Dec. 31, 1924, Jan. 5, 1925; Deserto, ♀ ad., ♂ imm., March 28, 1925.

Additional specimens.—Ceará: Quixada, ♂, ♀ ad., June 10, 24, 1913. R. H. Becker.

The Rufous-backed Jacana is remarkably uniform throughout its range, birds from so widely remote sections as Guiana, eastern Brazil, and Paraguay being perfectly alike. Specimens from northern Venezuela (Maracay, Aragua) are darker chestnut on the back and may stand as *J. spinosa intermedia* (Sclater), while western Ecuador is tenanted by the well-marked *J. s. scapularis* Chapman,¹ distinguished by its lighter back, black stripe along the scapulars, and almost white (instead of greenish) outermost primaries.

The two dark Jacana forms inhabiting Colombia and eastern Panama, *J. melanopygia* (Sclater) and *J. hypomelaena* (Gray),² while requiring further investigation as to their interrelations and ranges, are also clearly conspecific.

[492. *Arenaria interpres morinella* (Linnaeus).

Tringa morinella Linnaeus, Syst. Nat., 12th ed., 1, p. 249, 1766—based on Catesby, Nat. Hist. Carolina, 1, p. 72, pl. 72, coast of Florida.

Arenaria interpres (not *Tringa interpres* Linnaeus) Reiser (1), p. 95, 1910—coast of Piahy.

Arenaria interpres morinella Reiser (2), p. 228, 1925—coast of Piahy.

The Ruddy Turnstone is a winter visitor to Brazil. Reiser shot several specimens about the middle of September 1903 among the lagoons on the north coast of Piahy, near Amaração.]

¹Amer. Mus. Novit., 31, p. 3, 1922—Chone, prov. Manabí, Ecuador.

²Elliot (Auk, 5, p. 296, 1888) was the first author to misapply Gmelin's name *nigra* to the Black Jacana of eastern Colombia.

Parra nigra Gmelin (Syst. Nat., 1, (2), p. 708, 1789) was solely and exclusively based on "Jacana tertia species" of Marcgrave (Hist. Nat. Bras., p. 191), and whatever this rather obscurely described bird from northeastern Brazil may be, it certainly is not *P. hypomelaena* which has never been found outside of Colombia and Panama. Lichtenstein (Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1816-17, p. 158, 1819) suggests its identity with *J. s. jacana*, attributing the discrepancies in the description to a possible transposition of the color-terms for upper and under parts. Unfortunately, there is no figure of this bird among Marcgrave's original drawings in the Menzel Collection.

493. *Hoploxypterus cayanus* (Latham).

Charadrius cayanus Latham, Ind. Orn., 2, p. 749, 1790—based on Buffon and Daubenton, Pl. Enl. 633, Cayenne.

Hoploxypterus cayanus Reiser, pp. 93, 223—Parnaguá, Piauhý and Miritiba, Maranhão.

Piauhý: Deserto, ♂ ad., Apr. 4, 1925; Ibiapaba, ♀ ad., Jan. 9, 1925.

Goyaz: Philadelphia, lower Tocantins, three ♀ ♀ ad., ♂ juv., Dec. 10, 14, 21, 1925 (Conover Collection).

The Spur-winged Plover ranges from Guiana and southern Venezuela (Orinoco basin) through Amazonia to southern Brazil.

494. *Belonopterus cayennensis lampronotus* (Wagler).

Charadrius lampronotus Wagler, Syst. Av., 1, Genus Charadrius, sp. 48, 1827—part, adult ptil. aest. (type from Brazil in Munich Museum examined).¹

Belonopterus cayennensis (not *Parra cayennensis* Gmelin) Reiser (2), p. 223, 1925—Lake Parnaguá, Lagôa Missão, and Rio Parnahyba, Piauhý.

Maranhão: Miritiba, two ♂ ♂ ad., April 10, 1910, April 23, 1907. F. Schwanda (Conover Collection).

These specimens as well as an adult female secured by R. H. Becker at Cidade da Barra, Rio São Francisco, Bahia, in Field Museum agree with a series from Matto Grosso, northeastern Argentina (Santa Ana, Misiones; Cambaceres, prov. Buenos Aires) and Uruguay, in having a distinct black stripe along the middle of the fore-neck, connecting the black of the throat with that of the breast. They are somewhat lighter on the sides of the head and neck, thereby approaching *B. c. cayennensis*, from Amazonia and Guiana, but this slight divergency should be confirmed by a larger series.

B. c. lampronotus thus seems to range over the greater part of the Brazilian table-land, while *B. c. cayennensis* replaces it in the savannas of Colombia, Venezuela, Guiana, and northern Brazil, south to the banks of the Amazon.²

¹Although Cayenne is included in its range, and the characters shown by birds from that country are considered to be probably seasonal, Wagler, in the first place, clearly had the southern form in mind, as is evident from the passage "*stria a mento in collo antico medio ad pectus ducta . . . nigerrimis*." Besides, the only specimen in the Munich Museum, named *C. lampronotus*, dating from the time previous to Wagler's death is from Brazil, and belongs to the race to which both Peters (Bull. Mus. Comp. Zool., 65, p. 296, 1923) and Wetmore (Bull. U. S. Nat. Mus., 133, pp. 169-170, 1926) have restricted the term *lampronotus*.

²The subspecific pertinence of the Lapwings recorded by Snethlage (Bol. Mus. Goeldi, 8, p. 84, 1914) from the islands of Marajó and Mexiana in the delta region has yet to be ascertained.

[495. *Squatarola squatarola cynosurae* Thayer and Bangs.

Squatarola squatarola cynosurae Thayer and Bangs, Proc. New Engl. Zool. Cl., 5, p. 23, 1914—Baillie Island, Arctic America.

Charadrius squatarola Reiser, pp. 94, 224—Amaração, Piauhý.

Reiser met with flocks of this winter visitor in the lagoons near Amaração, on the coast of Piauhý, where a female was shot on September 19, 1903.]

496. *Pagolla wilsonia wilsonia* (Ord).

Charadrius wilsonia Ord in Wilson's Amer. Orn., 9, p. 77, pl. 73, fig. 5, 1814—"shores of Cape Island" = Cape May, New Jersey.

Eudromias wilsoni Reiser (1), p. 94, 1910—coast district of Piauhý.

"*Charadrius wilsoni* (Ord) = *Ochthodromus wilsonia* (Ord)" (sic) Reiser (2), p. 224, 1925—Amaração, Piauhý.

Maranhão: Mangunça Island, ♂ ad., ♀ ad., March 8, 1924.

Additional specimens.—Piauhý: Amaração, ♂ ad., four ♀ ♀ ad., Sept. 14, 15, 17, 1903. O. Reiser (Vienna Museum).

Like the type of *Charadrius crassirostris* Spix,¹ with which it was directly compared, our male has but a few feathers behind the auriculars faintly tipped with pinkish cinnamon, while the jugular band, in both, is blackish, indistinctly edged with pale brownish. They are matched by numerous individuals from the United States and the Bahamas, but are very different from a series of fifteen males from Aruba, Bonaire, Aves Island, Margarita, and Trinidad,² all of which have the crown, sides of head, and jugular band strongly suffused with bright rufous (varying from sayal brown to orange cinnamon). The same applies to the female which differs from ten specimens of the Caribbean breeding race by the complete absence of any rufescent tinge whatsoever on head and jugular band, and cannot be distinguished from females of Wilson's Plover. Only two (out of five) birds obtained by Reiser at Amaração, coast of Piauhý, in September, 1903, show a slight cinnamon tinge behind the auriculars and in the jugular band, such as is frequently observed in specimens taken in the United States.

Under these circumstances, I cannot but maintain my former contention³ that the birds occurring in winter time on the coast of eastern Brazil are migrants from the United States.

¹Av. Bras., 2, p. 77, pl. 94, 1825—Brazil (locality not specified).

²*Pagolla wilsonia cinnamomina* Ridgway, Bull. U. S. Nat. Mus., 50, Part 8, p. 113, 1919—Sabanilla, Colombia.

³Abhandl. 2. Kl. Bayr. Ak. Wiss., 22, No. 3, p. 715, 1906.

Although Mr. Todd¹ dissents from this view, it seems extremely unlikely that all of the numerous examples taken in Brazil should be immature (those examined in the present connection have every appearance of being adult). Besides, it must be remembered that *P. w. cinnamomina* has not yet been met with outside its breeding range, and is most probably a resident, non-migratory form.

[497. *Charadrius hiaticula tundrae* (Lowe).

Aegialitis hiaticula tundrae Lowe, Bull. Brit. Orn. Cl., 36, p. 7, 1915—Valley of the Yenisei, eastern Siberia.

Aegialitis hiaticula (not of Linnaeus) Reiser, pp. 100, 225—Miritiba, Maranhão.

The late F. Schwanda shot a molting female on October 11, 1907, at Miritiba, Maranhão. Hartert, to whom the specimen, now in the Vienna Museum, was submitted, believes it to be referable to the dark race breeding in eastern Siberia. Doubtless a rare straggler to South America.]

498. *Charadrius collaris* Vieillot.

Charadrius collaris Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 27, p. 136, 1818—based on Azara, No. 392, Paraguay.

Aegialitis collaris Reiser, pp. 94, 225—below Therezina, Ilha São Martin, and Amaração, Piauhý.

Piauhý: Ibiapaba, ♀ juv., Dec. 26, 1924 (Conover Collection).

On examining a large series of Azara's Ringed Plover I notice considerable individual variation in size and, while admitting that specimens from southern South America average slightly larger, the difference does not seem to be constant enough to warrant the recognition of two geographic races, as has been advocated by Hartert and Jackson.²

499. *Limnodromus griseus griseus* (Gmelin).

Scolopax grisea Gmelin, Syst. Nat., 1, (2), p. 658, 1789—based on "Brown Snipe" Pennant, Arct. Zool., 2, p. 464, coast of New York.

Maranhão: Mangunça Island, two ♂♂ ad., March 10, 19, 1924.

The Dowitcher, a winter visitor to South America, has previously been recorded from various other localities along the Brazilian coast (Marajó; Cajetuba, near Pará; Bahia). One of Snethlage's examples

¹Ann. Carnegie Mus., 7, p. 415, 1911; l. c., 14, p. 186, 1922.

²Ibis, 1915, pp. 530-531.

is in full winter dress, while the other already shows a few feathers of the nuptial plumage.

[500. **Ereunetes pusillus** (Linnaeus).

Tringa pusilla Linnaeus, Syst. Nat., 12th ed., 1, p. 252, 1766—based on Brisson, Orn., 5, p. 222, pl. 25, fig. 2, Santo Domingo.

Ereunetes pusillus Reiser, pp. 95, 228—Amaração, Piauhý.

The Semipalmated Sandpiper, a common winter visitor in South America, was met with by Reiser in the coast district of Piauhý, in September, 1903.]

[501. **Canutus canutus rufus** (Wilson).

Tringa rufa Wilson, Amer. Orn., 7, p. 43, pl. 57, fig. 5, 1813—middle Atlantic states, probably New Jersey.

Tringa canuti (not *Tringa canutus* Linnaeus) Reiser (1), p. 94, 1910—coast of Piauhý.

Tringa canuti rufa Reiser (2), p. 227, 1925—coast of Piauhý.

This great wanderer was collected by the Vienna Academy Expedition near Amaração, north coast of Piauhý, late in September, 1903.]

502. **Pisobia fuscicollis** (Vieillot).

Tringa fuscicollis Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 34, p. 461, 1819—based on Azara, No. 404, Paraguay.

Maranhão: Carolina, lower Tocantins, three ♀ ♀ ad., Nov. 6, 1925 (Conover Collection).

Bonaparte's Sandpiper is a common winter visitor to South America.

503. **Pisobia minutilla** (Vieillot).

Tringa minutilla Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 34, p. 466, 1819—"à Halifax et dans la Nouvelle Écosse, mais . . . beaucoup moins nombreux que dans les îles Antilles."

Limonites minutilla Reiser, pp. 95, 228—above Pintados, Rio Parnahyba, and Amaração, Piauhý.

Maranhão: Mangunça Island, ♀ ad., March 8, 1924.

Piauhý: Ibiapaba, ♂ ad., Jan. 8, 1925 (Conover Collection).

The Least Sandpiper is likewise a common winter visitor in South America.

[504. *Crocethia alba* (Pallas).

Trynga (alba) Pallas in Vroeg, Cat., Adumbrat., p. 7, 1764—coast of North Sea, Holland.

Calidris arenaria Reiser, pp. 95, 228—Amaração, Piauí.

Specimens of the Sanderling, another winter visitor from the north, were taken on September 14, 1903, near Amaração, along the coast of Piauí, by members of the Vienna Academy Expedition.]

[505. *Actitis macularia* (Linnaeus).

Tringa macularia Linnaeus, Syst. Nat., 12th ed., 1, p. 249, 1766—based on "Spotted Sandpiper" Edwards, Glean. Nat. Hist., 2, p. 139, pl. 277, lower figure; near Philadelphia, Pennsylvania.

Actitis macularius Reiser, pp. 95, 227—Amaração, Piauí.

A common winter visitor to South America, which was observed and secured by O. Reiser along the Rio Parnahyba and on the coast of Piauí in September, 1903.]

[506. *Numenius hudsonicus* Latham.

Numenius hudsonicus Latham, Ind. Orn., 2, p. 712, 1790—based on "Eskimaux Curlew" Pennant, Arct. Zool., 2, No. 364, pl. 19, Hudson Bay; Reiser, pp. 94, 226—Amaração and Ilha Grande, Piauí.

Specimens of the Hudsonian Curlew were shot by members of the Vienna Academy Expedition on the coast of Piauí around the middle of September, 1903.]

507. *Himantopus himantopus mexicanus* (Müller).

Charadrius mexicanus P. L. S. Müller, Natursyst., Suppl. p. 117, 1776—based on "L'Echasse du Mexique" Brisson, Orn., 5, p. 36, 1760, Mexico.

Himantopus mexicanus Reiser, pp. 94, 225—Ilha Grande (Lake Parnaguá) and Marúas, Rio Parnahyba, Piauí.

Maranhão: Mangunça Island, ♂ ad., Feb. 27, 1924.

A perfectly typical example of the American Stilt, without trace of a white band across the upper back, and with the white restricted to the anterior crown, and doubtless a migrant from the north. Reiser (l. c., p. 225) states that a male from Parnaguá, Piauí, resembles the southern *H. h. melanurus* in having a white band across the hind neck, but agrees in dimensions with *H. h. mexicanus*.

There is no definite breeding record for any Stilt in northern Brazil, though it would appear from Wied's¹ description that the

¹Beitr. Naturg. Bras., 4, (1), p. 741, 1832.

birds he found breeding in abundance on the sand banks of the Rio Belmonte, Bahia, belonged to the present form rather than to *H. h. melanurus*, the northern limits of whose range have yet to be determined.

508. *Capella paraguaiae paraguaiae* (Vieillot).

Scolopax paraguaiae Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 3, p. 356, 1816—based on Azara, No. 387, Paraguay.

Gallinago paraguayae Reiser, pp. 95, 229—Parnaguá, Piahy.

Maranhão: São Bento, ♀ ad., one (unsexed) adult, Aug. 31, Sept. 14, 1923.

In addition, we have several specimens obtained by R. H. Becker at São Marcello, Rio Preto, Bahia. The Brazilian skins agree in every respect with twelve others from Villa Rica, Paraguay, collected by F. Schade, in the Conover Collection.

With a very satisfactory series of nearly fifty examples of this Snipe from Chile, Paraguay, Argentina, and Brazil before me I have no difficulties in recognizing the two races discriminated by Mrs. Meinertzhagen¹ and Dr. Wetmore.² However, I cannot agree with these authors in the application of Vieillot's name. Azara clearly describes the *breeding* species of Paraguay, which, so far as I can see, is indistinguishable from the Brazilian bird (*S. braziliensis* Swainson); whereas the occurrence in Paraguay of the southern race, with buffy, more coarsely marked foreneck, even in winter time, has yet to be proved.

C. p. paraguaiae is, therefore, the proper name of the Snipe breeding from Colombia and Guiana south to Uruguay and Buenos Aires, *Scolopax braziliensis* Swainson and *Scolopax frenata* Lichtenstein³ being synonyms. The breeding form of southern Argentina and Chile, migrating northward in winter, will have to stand as *Capella paraguaiae magellanica* (King).

[509. *Rynchops nigra intercedens* Saunders.

Rhynchops intercedens Saunders, Bull. Brit. Orn. Cl., 4, p. XXVI, 1895—type from São Paulo, Brazil, in British Museum.

¹Ibis, 1926, pp. 506, 509.

²Bull. U. S. Nat. Mus., 133, pp. 161-162, 1926.

³Verz. Dubl. Berliner Mus., p. 75, 1823.—Though published without any description, *S. frenata*, by the added reference to "Becassime (sic) Azar. 387," becomes virtually a valid name for the species described under that name.

Rhynchops nigra (not of Linnaeus) Reiser (1), p. 98, 1910—Illa Grande, Lake Parnaguá, Piauhý.

Rhynchops nigra intercedens Reiser (2), p. 242, 1925—Lake Parnaguá, Urubú Grande, Manga, Colonia Floriano, São Gonçalinho and Queimadas, Rio Parnahyba, Piauhý, and Bôa Vista, Maranhão.

The Southern Skimmer has been recorded by Reiser from many localities in Piauhý and Bôa Vista, northern Maranhão. We have no material from northern Brazil.]

510. *Sterna superciliaris* Vieillot (subsp.?).

Sterna superciliaris Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 32, p. 176, 1819—based on Azara, No. 415, Paraguay; Reiser, pp. 97, 242—Remanso do Arasa and near Therezina, Rio Parnahyba, and near Amaração, Piauhý.

Maranhão: São Luiz, ♀ ad., ♀ juv., July 30, 31, 1923.

The adult female as well as an unsexed adult from Marajó, while somewhat smaller (wing 170-178 mm.), agree with specimens from southern Brazil and Argentina in decidedly gray back, comparatively narrow black loreal streak, and wholly yellow bill, without black tip. In size, they closely approach *S. albifrons antillarum* Lesson, but this form is paler above, with more black in the loreal region, and has the bill as a rule tipped with black. Three specimens from Inagua Island (Bahamas), however, lack the black tip and run very close to the female from Maranhão.

It will be remembered that Reiser¹ recorded both *S. superciliaris* and *S. antillarum* from Amaração, in the coast region of Piauhý. However, I cannot help thinking that they all belong to one and the same systematic unit which occupies, geographically as well as taxonomically, an intermediate position between these two allied forms, and may prove to be separable from either.

[511. *Phaëtusa simplex simplex* (Gmelin).

Sterna simplex Gmelin, Syst. Nat., 1, (2), p. 606, 1789—based on "Simple Tern" Latham, Gen. Syn. Birds, 3, (2), p. 355, Cayenne.

Phaëtusa magnirostris Reiser (1), p. 97, 1910—Piranha, Lake Parnaguá, and Cocal, Rio Parnahyba, Piauhý.

"*Phaëtusa (magnirostris) chloropoda*" (not *Sterna chloropoda* Vieillot) Reiser (2), p. 240, 1925—same localities.

Reiser records the Large-billed Tern from Lake Parnaguá and the sand banks of the Rio Parnahyba, Piauhý. We have no material

¹Denks. Math.-naturw. Kl. Ak. Wiss. Wien, 76, pp. 97, 241, 1910-25.

from this state, but as birds from Pernambuco are referred by Wetmore¹ to the dark-backed northern race, there can be hardly any doubt that those from Piahy likewise belong to it.]

[512. *Larus cirrocephalus cirrocephalus* Vieillot (?).

Larus cirrocephalus Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 21, p. 502, 1818—Brazil, coll. Delalande, =Rio de Janeiro; Reiser (2), p. 242, 1910—São Luiz and Miritiba, Maranhão.

Larus atricilla (not of Linnaeus?) Reiser (1), p. 100, 1910—Maranhão.

Reiser refers a male in winter plumage, obtained by F. Schwanda at Miritiba on January 26, 1908, to this species, which otherwise is not known to occur farther north than Rio de Janeiro. The identification seems to be open to doubt, the same example having previously been listed as *L. atricilla*, a species more likely to be met with in Maranhão.]

[513. *Anhima cornuta* (Linnaeus).

Palamedea cornuta Linnaeus, Syst. Nat., 12th ed., 1, p. 232, 1766—based on Marcgrave's "Anhima" (Hist. Nat. Bras., p. 215) and Brisson's "Kamichy" (Orn., 5, p. 518, Cayenne); Reiser, pp. 96, 233—Remanso de Coco, Rio Parnahyba, Maranhão.

The Vienna Academy Expedition met with the Screamer on the shores of Lake Parnaguá in Piahy and again on the Maranhão side of the Rio Parnahyba.

The Inhuma has an extensive range in tropical South America, stretching from Ecuador, Venezuela and Guiana down to southern Brazil.]

[514. *Cairina moschata* (Linnaeus).

Anas moschata Linnaeus, Syst. Nat., 10th ed., 1, p. 124, 1758—"India," errore, =Brazil (see Berlepsch and Hartert, Nov. Zool., 9, p. 131, 1902).

Cairina moschata Reiser, pp. 96, 233—Lagôa do Saco and lower Parnahyba, Piahy.

The Muscovy Duck was met with during the Vienna Academy Expedition at various localities in Piahy.]

[515. *Sarkidiornis sylvicola* Ihering and Ihering.²

Anas carunculata (not of Vieillot 1816) Lichtenstein, Abhandl. Ak. Wiss. Berlin, Phys. Kl., for 1816-17, p. 176, 1819—based on "Ipecati Apoa" Marcgrave, Hist. Nat. Bras., p. 218, and Azara, No. 428 (Paraguay).

¹Bull. U. S. Nat. Mus., 133, p. 141, 1926.

²Most probably conspecific with the Old World species (*S. melanota*).

Sarkidiornis sylvicola Ihering and Ihering, Cat. Faun. Braz., 1, p. 72, 1907—new name for *Anas carunculata* Lichtenstein; idem, l. c., p. 408—Primeira Cruz, Maranhão.

"*Sarcidiornis carunculata* (Illig.) (—*Sylvicola* Ihering)" (sic) Reiser (2), p. 234, 1925—below Nova York and Marúas, Piauhý.

Recorded by Reiser from the lower Parnahyba.]

[516. ***Dendrocygna viduata*** (Linnaeus).

Anas viduata Linnaeus, Syst. Nat., 12th ed., 1, p. 205, 1766—Carthagena, Colombia.

Dendrocygna viduata Reiser, pp. 96, 235—Lake Parnaguá, Lagôa do Rio Fundú, and Marúas, Rio Parnahyba, Piauhý.

Recorded by Reiser from several localities in Piauhý.]

517. ***Dendrocygna autumnalis discolor*** Sclater and Salvin.

Dendrocygna discolor Sclater and Salvin, Nomencl. Av. Neotrop., p. 161, 1873—"Venezuela, Guiana et Brasilia," type from Maroni River, Surinam; Reiser, pp. 96, 236—Lake Parnaguá, Rio Taquarussú and Urubú Grande, Rio Parnahyba, Piauhý.

Ceará: Varzea Formosa, ♂, two ♀ ♀ ad., March 1, 1925 (Conover Collection).

Piauhý: Ibiapaba, ♂ ad., Jan. 8, 1925 (Conover Collection).

Generally distributed in South America.

518. ***Nettion brasiliense*** (Gmelin).

Anas brasiliensis Gmelin, Syst. Nat., 1, (2), p. 517, 1789—based on "Mareca alia species" Marcgrave, Hist. Nat. Bras., p. 214, northeastern Brazil.

Nettion brasiliense Reiser (2), p. 237, 1925—Lake Parnaguá and Rio Parnahyba, Piauhý.

Maranhão: Primeira Cruz, ♂ ad., June 30, 1906. F. Schwanda (Conover Collection).

The Brazilian Teal has an extensive range in South America.

[519. ***Nomonyx dominicus*** (Linnaeus).

Anas dominica Linnaeus, Syst. Nat., 12th ed., 1, p. 201, 1766—based on "La Sarcelle, de Sainte-Domingue" Brisson, Orn., 6, p. 472, pl. 41, fig. 2, Santo Domingo.

Erismatura (Nomonyx) dominica Reiser (2), p. 238, 1925—Inhuma, Rio Parnahyba, Piauhý.

Reiser shot an immature female of this duck near Inhuma, Rio Parnahyba, on July 22, 1903. The species is widely distributed throughout tropical America.]

[520. *Anhinga anhinga* (Linnaeus).]

Plotus anhinga Linnaeus, Syst. Nat., 12th ed., 1, p. 218, 1766—based on "Anhinga" Marcgrave (Hist. Nat. Bras., p. 218, northeastern Brazil) and Brisson (Cayenne); Reiser, pp. 97, 239—mouth of Pedra-Farada and above São Estevão, Rio Parnahyba, Piahy.

The Vienna Academy Expedition met with the Water Turkey at various localities on the middle and upper stretches of the Rio Parnahyba.]

[521. *Phalacrocorax olivaceus olivaceus* (Humboldt).]

Pelecanus olivaceus Humboldt, Rec. Obs. Zool. et Anat. Comp. 1, p. 47, 1805—near Banco, Rio Magdalena, Colombia.¹

Phalacrocorax vigua Reiser (2), p. 239, 1925—Barra do Amaração, Piahy, and Barra do Tutoja, Maranhão.

Observed by O. Reiser along the coast of Piahy and Maranhão. The Cormorant is generally distributed in South America.]

[522. *Colymbus dominicus brachyrhynchus* Chapman.]

Colymbus dominicus brachyrhynchus Chapman, Bull. Amer. Mus. N.H., 12, p. 255, 1899—Chapada, Matto Grosso, Brazil.

Podicipes (sic) *dominicus* Reiser (1), p. 97, 1910—Canto Grande, Rio Parnahyba, Piahy.

Podicipes dominicus brachyrhynchus Reiser (2), p. 240, 1925—same locality.

The only record of this Grebe is a young male secured by Reiser on July 28, 1903 at Canto Grande, Rio Parnahyba, Piahy.]

523. *Podilymbus podiceps podiceps* (Linnaeus).

Colymbus podiceps Linnaeus, Syst. Nat., 10th ed., 1, p. 136, 1758—based on Catesby, Carolina.

Ceará: Varzea Formosa, ♂ ad., March 8, 1925.

Additional specimens.—Ceará: Juá, near Iguatú, ♂ ad., July 30, 1913; Quixada, ♀ juv., June 27, 1913. R. H. Becker.

These specimens appear to me indistinguishable from others taken in the United States and, therefore, do not belong to *P. p. antarcticus* (Lesson), of southern South America.²

[524. *Rhea americana americana* (Linnaeus).]

Struthio americanus Linnaeus, Syst. Nat., 10th ed., 1, p. 155, 1758—based on "Nhanduguaçu" Marcgrave, Hist. Nat. Bras., p. 190, Sergipe and Rio Grande (do Norte).

¹See Richmond, Proc. Biol. Soc. Wash., 39, p. 142, 1926.

²See Wetmore, Bull. U. S. Nat. Mus., 133, p. 49, 1926.

Rhea americana macrorhyncha Reiser (2), p. 249, 1925—Apertada Hora, Santo Antonio de Gilboez, and Grotão, Piauhý.

The typical form of the Nandu, redescribed by Sclater as *R. macrorhyncha* from Pernambuco, ranges south at least into Bahia. No material is available.]